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AMSTRAD Computer User



The Official Amstrad Home Computing Magazine

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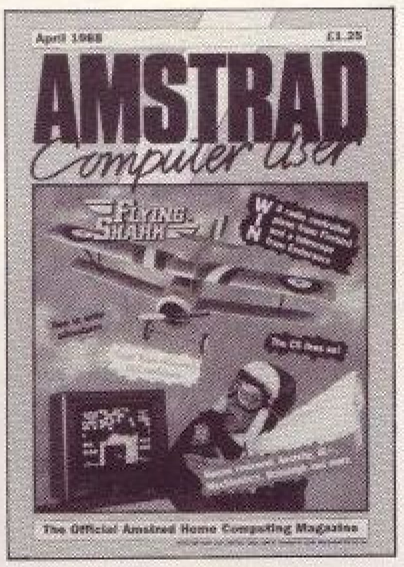
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AMSTRAD Computer User

The official magazine for all users of Amstrad computers

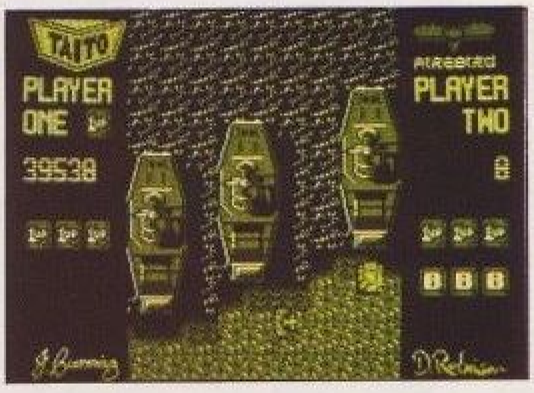
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Editorial and Advertising offices:
169 King's Road, Brentwood, Essex CM14 4EF.
Tel: 0277-234459 (Editorial); 0277 234434 (Advertising)
Telecom Gold: 72:MAG021

Published by Avralite Ltd, Adlington Park, Adlington, Macclesfield SK10 4NP.

News trade distribution: Diamond-Europress Sales & Distribution Ltd, Unit 1, Burgess Road, Ivyhouse lane, Hastings, East Sussex TN35 4NR. Tel: 0424 430422.

Editor: Simon Rockman
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Advertising Sales: Virginia Cheke

ABC 63,599 Jan-June 1987

Cover photograph by: Martin Howett

NEWS

Government praise for Konix

PETER Walker, Secretary of State for Wales, opened a new Konix joystick factory in Gwent at the beginning of the year. With him was Michael Foot.

They congratulated the Chairman of Konix, Wyn Holloway and his wife Sandra on building up the company, which in two years has grown from nothing to a £500,000 a month turnover.

The new factory is good news for the 100 people of South Wales who are employed there and for the British balance of payments, since 90 per cent of their production is exported.



Peter Walker, Michael Foot, Wyn and Sandra Holloway

Gremlin takes the Mickey

MICKEY Mouse is Gremlin's latest licenced character. The game is set in Disney Castle where four evil witches, under the power of the Ogre King, have stolen Merlin's wand to do evil deeds.

The wand has been used to cast a spell over the land so that the Ogre king can reign supreme. For the spell to remain cast the wand has been broken into four pieces and given to the witches to guard in the four towers of the castle.

The witches have stolen all but the last flagon of enchanted water and use it to create evil guardians to help keep the towers secure.

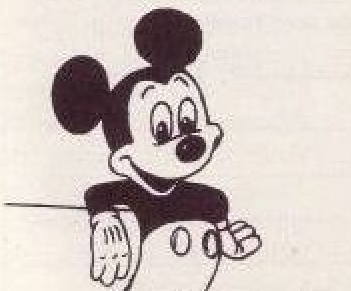
Merlin has enlisted you in the role of Mickey to use the last of the water to recover the wand and free the land by defeating the Ogre King.

Armed with the water, you can dissolve the witches' evil guardians, ogres, ghosts, spells and ghoolies. A more permanent death can be afflicted upon ogres with a swift clonk of your club.

Ghosts will exercise their ability to walk through walls and floors in an attempt to relieve you of you magic water.

Disneyland can only hold out against the forces of evil for a limited time, so you must rush to retrieve the entire wand from the castle and then hot foot it across the lake of fire over the Devil's bridge to defeat the Ogre King and save Disneyland.

Mickey Mouse will cost £9.99 on tape and £14.99 on disc.



Arnor's new launch

OWNERS of Protext and Promerge will be able to benefit from Arnor's first CPC product launch since December.

The disc-based package forms an office utility suite. It can generate invoices from a Protext file, merging names and addresses from a separate database.

There are facilities for statements, credit notes and delivery notes, a particularly flexible label print routine and a sort program which is tailored for use with names and addresses.

The programs are all written using Promerge codes and can be adapted simply by a fairly techie user to suit custom needs.

The same disc can be used either on a CPC with Protext and Promerge or on a CPC and PCW running CP/M.

The package should be available in April at £24.95.

Freescape rides again

INCENTIVE Software is to follow up its smash hit game Driller with another title which uses the Freescape 3D modelling system.

The new title is The Dark Side. Ian Andrews, boss of Incentive, is keeping the details under his hat, but would admit that the new game will be a good deal cheaper than Driller at around £10 and will utilise some of advances they have made with the Freescape system.

Details from Incentive on (07356) 77288.

The day for bargain hunters

AMSTRAD COMPUTER SHOW

The ninth Amstrad Computer Show was only the second event to be held in the new Great Hall at Alexandra Palace. The magnificent venue was chosen to house the largest ever Amstrad Show.

The February weather provided a stark contrast for those exhibitors who remembered the last Ally Pally show and the sweltering heat.

In terms of new products the show proved to be something of a disappointment for CPC users.

However for bargain hunters there was plenty of scope from day 1, with prices becoming really keen as the show continued.

Romantic Robot were selling the RoDos Extra disc which offers online help for RoDos users, documenting every command. It also provides a number of Basic utility programs, a disc doctor and reader.

The skilled user can manipulate information on PC discs by using RoDos Extra. Even the price is interesting. It costs £9.88, because 1988 is, as Romantic Robot call it, The Year of The Robot.

Metrotec showed their trackerball, which seems a trifle expensive even at a special show price of £65 (reduced from £75). However the device is very well made and would justify the cost for a serious user.

A strong communications interest at the show produced a variety of modems and interfaces. Their was the Dataphone combination of KDS interface, lead and Demon II modem for £110. However this set-up is not BT approved. A package which include the green stickered Designer modem would set you back a further £20.

Micronet offered the superior Cage Rom (see the review in this issue) and Pace Linnet modem with an interface at a package price of £219.

MicroLink launches two modems, but so far they are only supplied with software for the PC. Even so, the MicroLink dual-speed at £99 was the cheapest modem at the show. For CPC comms software you could add Mini Office II, which costs £14.95 on tape or £19.95 on disc.

Price wars on disc prices brought boxes of ten 3in discs down to £16. The best bargain at the show lurked on the CP Software stand where an Amdrum drum machine could be bought for £9.95 including two tapes of sampled sound.

Amstrad gave pride of place to the new PPC portable with its amazing modem, and a number of stands had the machine for sale.

Cumana showed the add-on box which gives the PPC five PC compatible slots. They predicted an April delivery date without too much confidence.

The new LQ5000di printer showed off its 24pin letter quality output. The di stands for Dual Interface, meaning it will work with Centronics or RS232 devices. These were not available for sale.

A nostalgic sight on the Micro Media stand was a flowchart template. It appears there are some programmers who use Pascal after all.

Prize for the most attractive stand should be split between Nabitichi, whose cross between a temple and a cage was a mecca for the price-watching shopper, and Pink Software, who conveyed the speed of their PC software by dressing as motor racing drivers. They hope to sponsor a pink racing Porsche next year.

Overall it was a disappointing show for the CPC owner who just wanted to see new products, but a wonderful place for the fan who wanted to pick up consumeables, peripherals or games software at a knock down price.



Board not bored

ACTIVISION is releasing a cult board game of 1987 as a computer game.

September was invented by Danny Kishon (pictured above) after spending far too long riding around on buses. Much of this riding was done in September. The game which resulted has made Danny a very rich young man. You'll be able to see what had so many people hooked when you get September for the CPC. It's £9.99 on tape; £14.99 on disc.

CPC discs immune to CP/M virus

FOLLOWING tales of a "virus" on Commodore Amiga discs comes a report from the United States of a similar disease on CP/M discs.

The Amiga virus, a craftily written program produced by a clever but unscrupulous hacker, spread itself around by hiding inside a system file and getting copied invisibly by the usual copy procedure.

Some time later it would get control of the machine, lock the keyboard, print a message and corrupt any discs inserted at the time.

The CP/M virus is more subtle. According to Des B Leif, the chairman of the American CP/M Users Group, it "copies itself into system ram, where it gets control of the system clock.

"Come midnight, it re-writes the interrupt routines and jams the system bus.

"This can result in the system control loop being disrupted and a WRITE signal being sent to system Rom. This should never happen normally, and it results in the ram reformatting.

"Thereupon, whenever the affected machine is turned on, the message 'All Programs, Ram, Interrupt Locations, Forced Out Of Loop' appears and a new chip is needed to rectify the fault.

"We're very worried that this irresponsible program might result in many CP/M users upgrading to MSdos".

But, a spokesman for the Computer Retailers and Allied Professionals Association said: "The Amstrad range of machines – the CPC and PCWs – are by design immune to this problem.

"However, we would like all owners of the machine to check for the so-called virus so that we can ascertain the degree of infection for other, less fortunate CP/M system owners".

Amstrad's technical department is working on a simple check you can use to see whether your machine has the virus.

Run it even if you don't normally use CP/M – the nature of the program is so subtle it could even have crept on to tape production versions of some games programs.

Send a stamped addressed envelope to *Amstrad Computer User* for a listing of the program and some more details.

Funny formats

I AM interested in using my own "funny formats" on discs. I have a CPC 6128 and I'm slowly learning machine code and – even more slowly – CP/M programming.

Is there some way to alter the format identifier from &C1,(data) or &41,(CP/M) or &08,(IBM) to another value when formatting?

I know that there is an entry in the directory which holds the user number and this is also held at &A701 in ram. I assume therefore that there is a similar entry held somewhere else in ram which can be changed by the user. The only trouble is that I haven't yet been able to find it. I'm saving up for a firmware guide, but as I'm unemployed, it will be a long time before I can get one.

I also have a complaint. I take four monthly magazines and a weekly one. I write fairly frequently with serious questions and/or complaints but I never seem to get into print.

This month in all four monthly magazines I've seen the same letter published – yes! EXACTLY the same letter. Not only that, but this letter has appeared TWICE in one magazine. (last month as well!!!!!).

If someone did that with a program they'd be lambasted from every pulpit across the land!!!!!

What I want to know is – Are my letters boring? blasphemous? insulting? Do I wear the wrong aftershave? Is my command of English too good for you? – (from what I keep coming across in your magazine I'm inclined to think so – incorrect spelling, poor use of English, bad syntax – your typesetter obviously can't cope with syntactical errors). Whatever the reason, I would be copiously grateful for an answer to my query.

M.J. Lyons
Burnage, Manchester

LD: *You won't get anywhere hacking disc formats without a firmware guide and a lot of patience. Just changing the identifier could have disastrous consequences.*

Perhaps other letters get printed in preference to yours because they exhibit a better regard for sentence length and demonstrate an awareness of the virtues of being economical with exclamation marks.

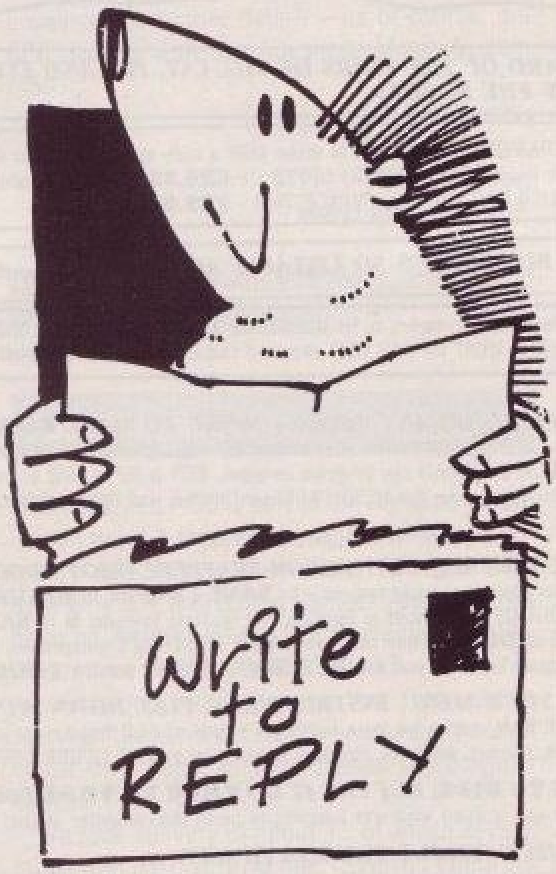


Chart complaint

WHO writes those ***** boring comments in the Gallup chart?

I've just been looking through some earlier editions of your (fantastic, superb) magazine, and what do I find but the same boring comments about Gauntlet in April, May and June editions of your mag.

It was probably in the July copy as well, but I can't find that edition, so sack the guy who writes them if he works for you.

I would like to point out that I feel sorry for all non-subscribers who only get *ACU* about a month after we do.

J. Melia
Bolton, Lancs

LD: *Slight problem. The chart comments are written by the editor, I know he feels guilty about using the same comments over several months but he argues that the chart is the last thing we send to the printers – so that it can be kept reasonably topical – and there isn't always time to update the comments. After all, it is still the same game.*

Stretched screen

IN a past *ACU* edition (I can't remember which) I was looking through the Basic tutor section and it says things about the Amstrad screen not being very large.

I am inclined to agree, as my 464 screen is indeed very tiny, but having purchased Gauntlet, I see that the Gremlin Graphics team have cut into the border. I thought this was impossible. Could you explain?

Alan Walsgrove,
Cannock, Staffs.

LD: *Point one. Gauntlet is sold by US Gold, but was written by Tony Porter at Gremlin, so everyone who read your letter and thought you were talking through your hat is wrong.*

You need to gen up on the 6845 video display processor. We've had several articles on this, the most recent being ZZKJ's big screen in the January 1988 issue, but note the corrections the following month.

Bleak future

I FEEL annoyed at the diabolical issue of 'straddy computers going off the market. Mastermind Alan Sugar (ahem, ahem) with his scheme of taking over the Sinclair name, is putting the CPCs away for life.

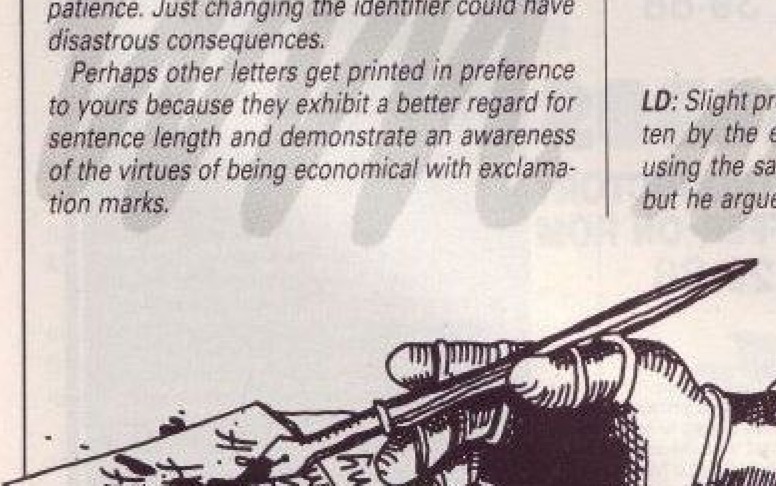
What will happen? Will we have to abandon our lovable little Arnolds forever and class them as antiques? It is annoying to find you have bought THE best computer on the market to have it overtaken by these Spectrum efforts.

With my Arnold who has over 200 games, a Quickshot and Quickshot 2 turbo joysticks and two years of ACU and my own programs, I have built up my library. Soon after the computers go out, software houses will stop making games. It has already started, I can't get a copy of Laser Genius or the Graphic Adventure Creator. Will Amstrad computers become a bad memory? or is this just a bad rumour?

Andrew Given,
Edinburgh.

LD: *I've seen a new 6128 manual. It's not much use to you or I because it is in German. But it is very important. Up until now all Amstrad machines have been sold as Schneider computers in the land of Porsche. Now Amstrad and Schneider have decided to sell their own computers in Germany.*

If Amstrad have gone to all the trouble to re-

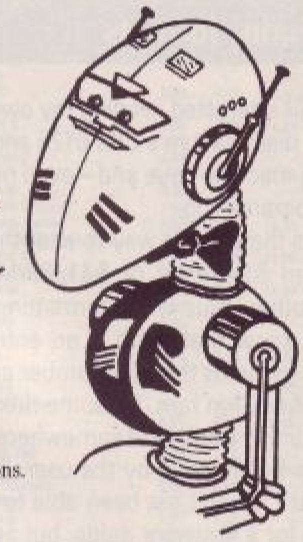


Send your letters to:
Lance Davis
Letters Editor
Amstrad Computer User
169 Kings Road, Brentwood
Essex CM14 4EF

ROMANTIC ROBOT *present*

1988 – THE YEAR OF THE ROBOT





Q: WELL, I'VE HEARD OF THE YEARS OF THE CAT, PIG, AND EVEN DRAGON – BUT THE YEAR OF THE ROBOT?

A: Absolutely! And ROMANTIC ROBOT wish to make 1988 a truly memorable year (if not us, who will?). To kick off with, there is an INTRODUCTORY OFFER OF **£29.88** ON RODOS, plus a truly unique 1988 NEW YEAR MAIL ORDER PRICE OF MULTIFACE TWO – **£39.88!**

Q: I LOVE SALES. BUT WHAT'S SO LIKEABLE ABOUT RODOS and MULTIFACE?

A: RODOS is too powerful and complex to be summed up here – please send a SAE for full info. MULTIFACE is (simply) a MUST for ANY CPC owner: it can copy and change programs as you wish.

Q: OH, DO I NEED TO DO ANY PROGRAMMING TO MAKE BACK-UPS?
A: NO! – NOT with the MULTIFACE TWO – it is in fact the ONLY product on the market which works FULLY AUTOMATICALLY. You LOAD any program as usual, RUN it for as long as you like and when you wish to make a copy you just press the MULTIFACE's red button and follow the menu and on-screen instructions.

Q: HOW DOES IT WORK THEN? IS IT EASY? USER-FRIENDLY? ERROR-TRAPPED? IDIOT PROOF? GUARANTEED?
A: YES! It works a treat and it could not be easier. The menu gives four basic options – to **SAVE** a program, to **RETURN** to continue it, to **JUMP** (say to your own routines – invaluable for hackers) and **TOOL** to access the MULTI-TOOLKIT set of built-in utilities. For example pressing **S** to **SAVE** will first allow you to **NAME** the back-up and then let you save a **PROGRAM** or just a **SCREEN** to **TAPE** or **DISK**. Before the saving itself, MULTIFACE compresses the program so that it takes the least amount of space on tape/disk and will re-load as quickly as possible. Once a program is saved, you can **RETURN** or **JUMP**, use the **TOOLKIT** to change it, **SAVE** it again, etc.

Q: DON'T YOU CORRUPT THE SCREEN WITH YOUR MENU, INSTRUCTIONS, PULL DOWN WINDOWS, ETC.?
A: NO. MULTIFACE TWO has its own memory (8K ROM & 8K RAM) and a lot more hardware – thus when it finishes its job or when you re-load your back-ups, everything is **FULLY** and **AUTOMATICALLY** restored: screen modes, colours, windows, etc. This is essential and NO OTHER DEVICE CAN DO IT!

***Q: OK, SO MULTIFACE CAN COPY FROM* TAPE TO DISC, *BUT CAN IT DO* TAPE TO TAPE *OR* DISC TO DISC *OR* DISC TO TAPE?**
A: Of course it can. MULTIFACE saves either to tape or disc and it saves whatever happens to be in the computer at that time – no matter how you loaded it in.

Q: SO FAR SO GOOD. BUT CAN'T I DO ALL THIS WITHOUT THE MULTIFACE?
A: ABSOLUTELY NOT! First, you need a hardware device, a "magic box", to be able to stop and copy programs AT ANY STAGE – be it upon loading, half-way through the game, etc. Tape/disc copiers can only try to copy programs BEFORE they load: if there are unorthodox loaders, speedlocks, protections against copying, etc., you'll end up with a problem – but not with a back-up. Also, with MULTIFACE you can poke infinite lives, ammunition, etc. – and then SAVE.

Q: MULTIFACE IS NOT THE ONLY 'MAGIC BOX' ON THE MARKET – WHY SHOULD I BUY IT MORE THAN ANYTHING ELSE?
A: There are four devices on the market. Action Reply by Datel Electronics, Disc Wizard by Evesham Micros, Mirage Imager and MULTIFACE TWO. Each manufacturer would naturally argue his product is the best buy – fortunately (for you and us), MICRONET recently compared all four units and MULTIFACE TWO came out the best in literally all respects: the most successful one – 100%!, the ONLY AUTOMATIC ONE, the FASTEST ONE both in LOADING *AND* SAVING time, the one taking the LEAST ROOM when saving – and you still get a couple of EXTRAS: a RESET button and an extensive and unique MULTI-TOOLKIT.

Q: MULTIFACE IS IT! THE RIGHT THING IN THE RIGHT TIME! IF ONLY IT PAID FOR ITSELF...
A: But it does! By the time you buy 8 programs on tape instead of disc, you will have saved £40 – the cost of the MULTIFACE. The money you save on further programs is all yours

.... **MULTIFACE ♥ worth every penny, saves you pounds!**

Romantic RObot Disc Operating System

Just one ROM will turn your CPC into a professional set-up: With RODOS you can attach additional disc drives – 40/80 track, single/double sided and store more than 800k per disc.

RODOS NEW

But RODOS is in fact much more than a fast and perfect DOS. RODOS also gives you RANDOM ACCESS, PRINTER BUFFER, full ROM manager, SILICON DISC, altogether 54 new bar commands, enormous power – all this and much more for £29.88 only!

multiface two

NEW YEAR MAIL ORDER SALE PRICE £ 39·88

RODOS INTRODUCTORY OFFER-ON ROM £ 29·88

The special price of £39.88 applies strictly to mail orders received with the coupon below before the 31st March, 1988

Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely foolproof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

Multiface II must be the cleverest hardware device at present – a necessity for disk owners who thought they were stuck with loading from tape every time.

AMSTRAD ACTION JANUARY 1987

THE YEAR OF THE ROBOT · BE PART OF IT

I order MULTIFACE 2 (£39.88)☐/ RODOS (£29.88)☐ plus p&p UK £1, Europe £2, Overseas £3

I enclose a cheque PO for £............ or debit my No ☐ Card exp..........

Name & address ....

ROMANTIC ROBOT UK LTD 15 Hayland Close London NW9 0LH ☎ 24 hrs 01-200 8870 ACU

translate and re-print a new 6128 manual they obviously see the computer will have a good life ahead of it.

You would not be able to get Laser Genius for a Spectrum of Commodore 64 so you cannot blame the demise of Oasis software on Alan Sugar. GAC is available from Incentive (07356) 77288.

Juvenile pirate

I AM 11 years old and a proud owner of a CPC 6128. I would like to ask something. My friend has a Spectrum (shudder) and a few weeks ago I went round to his house and played some of his games, they are mostly the £1.99 range.

Anyway I'm going to buy a tape recorder because disc games are a bit expensive for my dad. I wanted to know whether I could copy his games on to my tapes and discs?

Oh, by the way, I've never seen adverts for a tape deck, can you tell me why, because I have no idea how much they are?

In an earlier issue a boy complained about the listings. I totally agree, in fact I'm going to form a club called C.A.L.L. Children Against Long Listings. Keep up the good work!

Joseph Fowler
London SE15

LD: *Any cassette recorder should work. Try to get one with a remote socket. Your local Dixons should be able to sell you a suitable machine.*

You can't run Spectrum software on an Amstrad, that's why programmers get paid thousands of pounds to convert games. Even if you could it is ***illegal*** *to copy tapes or discs from a friend.*

I'll speak to Liz Ting and ask her to keep the programs short.

Encore

JUST before Christmas you very kindly published my letter offering my collections of music for use with Rainbird's Advanced Music System. If I may, I would now like to address your readers who own the basic, non-advanced version of The Music System.

I have prepared a collection of music, mainly classical, for TMS, comprising shorter pieces from my AMS discs, plus a few pieces I have never before released.

This new collection is entitled 'Short Works' and is as good a demonstration as any, of the capabilities of your TMS. Not only that, but unlike my previous collections you are able to examine my arrangements and use my envelopes in your own compositions. The disc contains no less than 50 .MUS files, all ready to load into TMS and play.

Sadly, these files are not stand alone but require the presence of TMS in order to work. Also, Short Works is only available on disc.

If any TMS-owning readers are interested, they are invited to send me a stamped, addressed envelope for further details – as of course, are CPC owners with the Advanced Music System (AMS).

Rob Baxter,
50 Milton Grove,
Whalley Range,
Manchester M16 0BP.

LD: *Your files were well received, so it is good to see you spreading the appeal.*

Poor sample

I REALISE that ACU is part of the Amstrad organisation but if it regards its responsibilities as primarily the users of the various CPC machines then why is it that during the last year there has been no mention of the fact that approximately 20 per cent of all 6128s don't work?

I was lucky with the one that I bought in summer 1986 and decided to encourage the purchase of a batch for our classes in computer literacy.

We took delivery of about 10, of which several failed with the disc drive read fail error. While our dealer valiantly tried to get parts from Amstrad we went ahead with a further order, but not long after delivery the problem occurred with the new batch as well.

It has got so bad that we often need to move the 6128s between classes in an attempt to keep the courses going. Many times I have had enquiries about which computer I would recommend, but Mr Sugar has destroyed our confidence by not helping our dealer to rectify the problems. Indeed I understand that Amstrad won't even acknowledge that there is a problem.

Perhaps it is about time that *ACU* explained the lack of action over this issue and came clean with the users before Amstrad goes to the wall.

L.D.J. Harris,
Tutor in Computer Literacy,
Plymouth, Devon.

LD: *This is going to sound as though I'm toeing the Amstrad line, but take it from me I'm not. The last figures I heard for the failure rate of Amstrad computers was three. That means that in every 100 machines sold there are only three faults. So if one machine goes wrong three times within the first year the other 99 will be OK.*

You are far from lucky with the one machine you bought; more unlucky with the others. By using wider samples Amstrad computers have been found to be more reliable than Acorn or Commodore machines. As for Amstrad going to the wall I doubt it. ACU is not owned by Amstrad.

Learning Pascal

IN reply to Sue Thomas in the February *ACU* it is not only women who are fed up with the zap-zap type of software.

I would suggest she buys a copy of XOR by Logotron. This consists of a series of mazes which have to be solved by logical thinking. There is no time limit, so you can even copy down parts of the maze that cause particular problems and work it out on paper. There are 15



mazes and each one introduces even more devilish obstacles to conquer.

Now to seek help myself. Could you suggest the best program for learning Pascal? There seem to be numerous versions on offer, such as Pascal 80, DR Pascal MT+, Nevada Pascal and so on. I would appreciate your advice.

Tony Baker,
Fareham, Hants.

LD: I'm no great shakes on Pascal but I'd recommend the HiSoft Pascal 80 package, if only because HiSoft is in England and easier to contact if you need some support. Phone number is 0525 718181.

I thought Xor was pretty ordinary and would advise you to get hold of Boulderdash. Your local software dealer should stock it. It costs £1.99 and is easily worth ten times as much.

Help

I OWN an Amstrad CPC 6128 and was wondering if it is possible to get a disc with the language Algol 68 on it. I have tried local software shops with no success. Could you please tell me the cost of the software package and where I can obtain it?

Andrew Rigby,
Cheshire.

LD: Sorry I can't help. Can anyone else?

Help and information please.

I AM a newcomer to the world of Amstrad computing and own a CPC 6128 (as an aside my other machine is a Memotech MTX 512).

In your November issue you recommended Dr. Watson's guide to assembly language programming to a reader who owns a CPC 464. As the range of CPC machines use the Z80, does the book cover all CPC machines? If not, is there one relating specifically to the 6128 that teaches at a very simple level?

The Hairy Hackers Haunt frequently refers to PASTE(R), which was explained as rewind the tape to end and then type in the listings given. I thought that when a game loaded the machine's memory was cleared. This is obviously not true. Can you explain please in simple terms what happens?

Various advertisers in your mag claim that their utilities are the best for copying files from tape to disc or vice versa. Can you advise how these work. Do they stop a programme that has been loaded from tape enabling it to be listed and then resaved on to disc?

Keith Kent,
Pontypridd, Mid Glamorgan.

LD: Dr Watson CPC books relate to all CPCs and, yes, it is simple. The pokes in Vax's pages are clever partly because they hide from the program's attempts to clear it out.

Machine code programs cannot be listed. I'd advise that you are good and honest and don't need to buy any of the illegal programs for copying software.

Square eyes

I OWN a CPC 464 with a mono monitor. My father (I am 14) has decided that we have watched too much TV and has decided to get rid of our colour TV.

Could you tell me where and for what cost I may obtain the necessary cables to connect the TV to my computer?

Owen White,
Ashford, Kent.

LD: You need an MP-1, which costs £19.95, or an MP-2, which costs £39.95. The MP-2 is better and will also work with a 6128. Your father will not be pleased to hear that it allows you to carry on using the TV to watch Eastenders. Try the User Club on 091 5108787.

Failed to finish

I HAVE a 6128 which was bought at the end of 1985. I joined the club the following year and have purchased quite a few programs. Anyway, in December 1986, I bought 3D Grand-Prix on disc and in summer '87 I was very disappointed to find out that it no longer loaded. On both sides A & B the game was faulty.

I was very upset at this but felt useless to do anything. So I was wondering if the club or anyone could help me restore this masterpiece as it was one of the best simulations I have ever played.

M.S. Darr,
Bradford.

LD: If a program stops working you should take it back to the shop where you bought it. After having had the program a year I'm not sure I'd expect the shop to give me a new copy – but it is worth a try.

Back issue

IS it possible to send off for one of the offers in the offers page that was offered in a back issue? For example, Could I send off for the Bargain Bundle of 1987 (using the coupon from the September issue of course)?

Please print my letter or at least answer it because I would like to know if I am about to waste £4.95 on an Out of Stock note.

Also, why is it that your magazines are delivered so promptly? I received my February 1988 issue in December 1987! Perhaps you were trying to get it out of the way so you could have a long holiday or maybe we'll end up getting July's issue in February.

S. Hopkins,
Tooting Bec, London.

LD: I'd expect things like back issue bundles to still be in stock; they were when this issue went to press. Some special offers may finish, especially if we sell out. You can always check by ringing the mail order number.

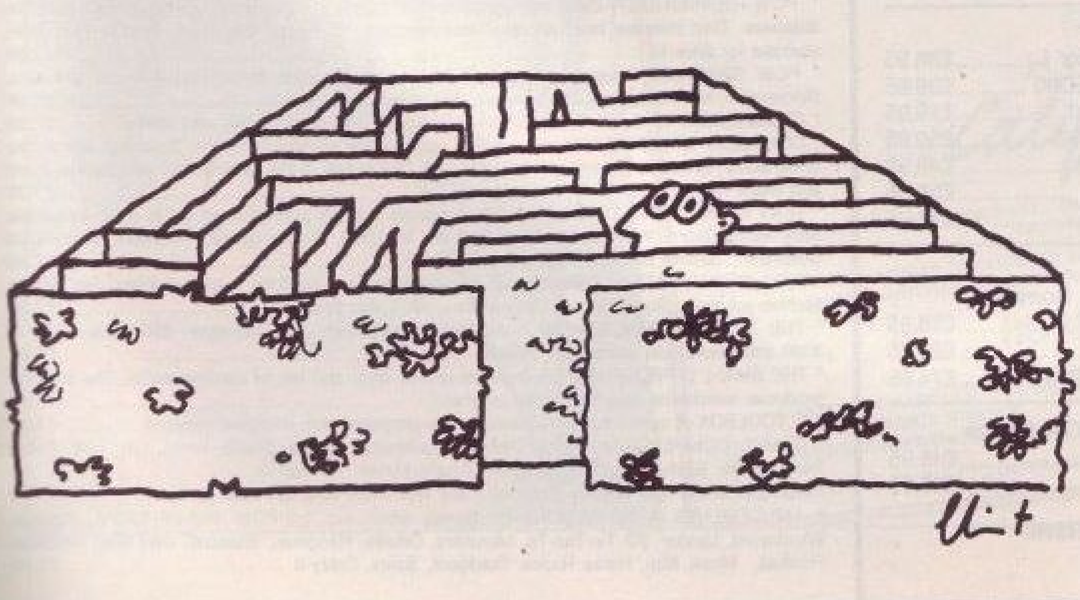
Subscribers get their magazines nearly a fortnight before they appear in the shops. Over Christmas things were brought forward a little so that we could have a holiday.

Spelling Rom

I HAVE a CPC 464 with a DMP2000 printer and currently do all my word processing with a Mini Office II system. I recently saw a friend's PCW system running a word processor with the spelling checker program Prospell which I have now become interested in buying.

However, I do not own a disc drive as yet and these particular types of programs do not seem to be available on cassette, so I would be grateful if you could tell me whether there are any spelling check programs available for the 464 on cassette.

Alternatively, would it be possible to run a rom-



based program on my set up and would I need to expand the current 64k memory?

James Dazley,
Portsmouth, Hants.

LD: *There is no rom or cassette-based spelling checker available, I'd recommend that you don't buy any more software. Instead save your money and buy a disc drive. Until then Mini Office II is probably the best program.*

Basically out of luck

JUST a few lines to ask if you know where I can get hold of Amstrad's Guide To Basic training course book, and also if you do, how much it would be?

We wrote to Amsoft, Brentwood, Essex in December and have not heard from them. We also tried some computer shops and book shops and had no luck, can you please help.

Mr Hailey,
Kingsbridge, Devon.

LD: *Amstrad's Guide to Basic is now out of print. Both Amstrad and I would suggest you get hold of a copy of* Starting Basic *from Glentop 01-441 4130.*

Musical appreciation

I AM an orchestral string player and when the Advanced Music System by Rainbird came on the market in 1986 I eagerly bought it because I was interested in its ability to print out music.

I soon found that it had too many limitations for serious printouts (inability to print triplets, to name but one).

I listened (using the Amstrad's internal speaker) to the examples of music supplied and relegated the program to the box where I keep little used programs and considered that once more I had wasted my money.

In April 1987 I read of Rob Baxter's offer of Bach's six Brandenburg Concertos for a copying fee of £2. Knowing that the concerto No.3 was scored for 13 individual string parts, my curiosity at how this could be accomplished with the Amstrad's three voices was really aroused – and what had I to lose – just the copying fee.

What I got amazed me. In addition to the music transcriptions there was a very professionally-produced information file on the concertos. This time I made up a lead and linked up to my hi-fi and sat back and thoroughly enjoyed 80 minutes of music of a quality I would not have believed possible.

Since then I have acquired two more discs of his transcriptions and am now eagerly looking forward to his fourth.

Listening to his music you soon realise that things like triplets, ornamentation, ritardandos, accellerandos and so on all become possible (not for printed output though) and the use of dynamics brings the music to life.

This set me thinking on how to produce music of my own and with Rob's help I have acquired a new hobby for which I am very grateful as it is a most satisfying one.

The purpose of this letter is fourfold. First to draw attention to Rob's letter in your January issue; second to point out that if Rainbird included examples of music such as Rob produces they would sell many more of their programs (even at an increased price).

Thirdly I want to encourage the systems author to improve on his already excellent work by overcoming some of the limitations and producing a manual with better explanations of envelopes and containing hints and tips such as, triplets in music can be produced by changing 4/4 time to 12/8.

And finally to thank all three for a new hobby which is rapidly becoming an obsession.

G.W. Duell,
Scarborough, North Yorks.

LD: *Ah! what an uplifting note (ouch) to end on.*



WIN
A HOLIDAY FOR TWO IN CALIFORNIA
HOTEL
California
CONFERENCE SUITE
CAFÉ SOCIETY
CASINO
RENDEZVOUS
HOTEL RECEPTION
WELCOME
TO THE
GRAND OPENING
OF
HOTEL
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YOU, YOUR COMPUTER AND MODEM ARE CORDIALLY INVITED TO JOIN US AT THE GRAND OPENING OF HOTEL CALIFORNIA.
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AS TIME GOES BY, the top range adventure games become more and more elegant, with better graphics, and parsers that are a giant step forward from the verb/noun only formats of yesteryear.

Although this is basically good news for the dedicated adventurer, it inevitably means an increase in price. This is not so surprising when one thinks of the hundreds of hours that go into producing an operating system as complex as in Knight Orc or the Guild of Thieves.

Last year we saw an increase in games that were produced using adventure game writing utilities such as The Quill and The Graphic Adventure Creator. Initially this seemed to be a good sign but as time goes by we see the other side of the coin.

Seek and ye shall find

Into adventures with Bill Brock

FOR a software house of only reasonable size, dealing in what we might call the middle range of computer adventures, the overheads in marketing an adventure game are often too high for them to compete with either the mass producer of budget games or the one man band who sells a similar product by mail order only. This could prove to be a retrograde step for adventurers, as not everyone can afford to buy top of the range adventures. Software houses such as Incentive, who have recently stopped marketing adventures, had a good reputation to maintain and although their adventure games were not state of the art, they were always sound and well play tested. That can not always be said of the cheaper productions.

This month we have one top range game and two cheapies to review. Lets hope that the latter and those like them will grow, and prove to be a fair replacement for those that have slipped out of sight.



Survival of the fittest?

An orc's lot is not a happy one. He was born with a face that would sour cream and manners that were never intended to foster the cause of racial harmony. Even with these, and many other unpleasant characteristics to mark him as one of the lowest of the low, Grindleguts is a hero. Not perhaps a true hero in the normally accepted sense of the word but he is certainly the central character in Level Nine's adventure, Knight Orc. This was their first adventure to include a wide range of interactive characters and truly screen-worthy graphics (only to be seen by disc users).

Sadly the Amstrad conversion appeared some time after other versions, giving other computer users a pleasure we could only read about. Available for the PCW and CPC (disc and cassette) machines, we can now stop 'orc bashing' and take up the colours of the Orc Preservation Society!

Knight Orc is distributed by Rainbird and the packaging shows the normal high standards. The instructions are very clear and helpful and the short story, The Sign of the Orc, by Peter McBride, sets the scene in a most colourful manner for the start of the adventure.

Briefly, a small band of orcs has come out of the mountains on a raid. They end up in the cellars of an inn and become definitely the worse for wear. While in this beer-stained state they are cornered by the forces of the righteous and have to think of something to save their skins.

Their solution was to have one of their number fight it out in single combat with a human champion at the following day's tournament. Grindleguts, being unconscious at the time, was volunteered for the job and the other orcs stole quietly off into the night.

While the rules of combat were satisfied providing that one orc remained to give battle, the local ladies bowling team had other ideas. Their interest being not only seeing that justice be done but also a propensity for bowls made of bone rather than the more traditional wood. Closely chased by these formidable ladies, the orcs destroy the bridge that is the only access to their mountain retreat.

Although Grindleguts is used to foraging among the more unsavory leavings of his world, he has never been so deep in the mire as now. This of course is where you come in – you have to help him win through. First across that broken bridge and then to solve the puzzles awaiting him on what should be his home ground, but what in reality proves to be an orc's nightmare.

The adventure is in three parts and although you can move between the last two parts at will, you must complete the first part before being permitted access to part two.

SURPRISE, surprise, friend Grindleguts ends up on a garbage heap after his abortive attempt at jousting with the tourney's champion. Having come to and gathered his wits after this experience, he has to find his way home. The bridge is destroyed but there is a convenient iron ring in the carved rock above the gap. If he had a piece of rope, perhaps he could somehow attach it to the ring and swing across.

Although orcs normally have very little aptitude for magic, his close association with you seems to magnify what little he has. Small lengths of material that closely resemble rope may be tied together and magically meld to give a continuous coil of stout rope. The only (!) problem, is to get a length long enough to serve his



Knight Orc

prime purpose of swinging across the chasm.

There are more than 200 locations in the first part of the adventure in which to search for these scraps of hemp, leather, hair and suchlike materials. There are also over 20 independent characters, including the formidable Mrs Wallop (prime mover in the Orc's Head Tavern Ladies Bowling Team), wandering around looking for golden treasure and the odd orc to brutalise.

The 200 odd locations are easy enough to map if you want to, but Knight Orc uses a similar operating system to Gnome Ranger that we looked at last month – you can GO TO or RUN TO locations without having to type in specific directions. GO TO describes all the locations as you pass through them and RUN TO ignores all the intermediate text.

Sometimes it might not be possible to get to the selected location because of a barrier in the way and occasionally your path may cross that of one of the independent characters. In the latter case they may steal from you (or retrieve something that is theirs) as you run past.

THERE are plenty of gold objects lying around for you to find but if you carry any of them openly, they will soon be stolen from you. Your score is wholly dependent upon the length of rope you have managed to put together, so try to hold back the orcish side of your team from grabbing anything that glitters.

The vast majority of the locations are repetitive groups of places based upon a type of tree – Elder Thicket, Elder Wildwood, Elder Grove, Hazel Thicket, Hazel Wildwood, Hazel Grove and so on. These locations have very little descriptive text and principally pad out the area where the independent characters can roam around. As you move about, you will hear them calling out their finds and needs, such as: "I've just stolen a gold finger from Attila", "How do I get a drink from the innkeeper?" or "Where can I find an orc to kill?".

You will have to map the entire area unless you can fathom out what are the significant locations. If you are stuck, remember that within just a few moves from the initial starting point (the rubbish heap), is somewhere that you can DMJNC and see everywhere of importance...

As in Gnome Ranger, you can FIND XXXX and sit back while the computer takes you there. You can also FOLLOW someone if you think that they will lead you to somewhere important. You may also get other characters to work for you, carrying out an independent action (of your choice) while you do something else.

In the first part there is only one character that is really friendly (or stupid) enough to do your bidding. In the other parts recruiting characters, especially those that compliment your own abilities, is very important.

Having found enough rope to swing across to Orc Mountain you enter the harder realms of part two. After all, the first part was only intended to give you an easy(ish) introduction to the new facilities available to you in Level Nine's super new operating system.

You now find that this extended symbiosis with a human has given him the ability to learn a number of magic spells. Finding them is not all that easy, but once learned they are a doddle to use – simply CAST XXXX and pouff, instant magic.

ONCE in the second part you also become aware of a strange helmet or visor that GG is wearing. Removal of this transports the action from a medieval fantasy world to quite a different technology altogether. Action in one world may be duplicated in the other. Some things are similar in both, many are quite different but may have similar functions – or do they...

GG himself is no longer the awkward, shambling, smelly, foul looking orc but is now



Second part of Knight Orc

something quite different. Which is the real world and which the fantasy...and does it matter? Those and many more intriguing puzzles are waiting for you to solve in Knight Orc. As with all Level Nine adventures there is plenty of built in humour. Just look carefully at all the treasures and all the characters and you will see what I mean.

The graphics on the CPC disc version are very good and in my opinion better than on other computers, including those on the Atari ST. The parser and command interpreter is very good with all the facilities one has come to expect from Level Nine. There are the usual RAM SAVE/LOAD and multiple OOPS commands, you can even tell characters to WAIT a specific number of turns before carrying out a given task. This latter facility may be useful if you wanted to plan a simultaneous attack on something that was too strong for one character to manage. An example given being:

TROLL, WAIT 2, IN, KILL VAMPIRE;
MOUSE, WAIT 1, IN, KILL VAMPIRE;
IN, KILL VAMPIRE.

Knight Orc is a great feast of all that is challeng-



ing in adventure gaming. The scenario is an intriguing mixture of ancient and modern with all the added difficulties of independent characters. It is not easy, but for those of us that suffer from brain fade, excellent hint sheets are available that will help you without giving too much away as you use them.

Dreamworld

Gonsoft is one of those one man bands mentioned earlier and Videoworld (CPC cassette) is its first major production. Text only, it is written by a keen adventurer who believes, in company with many others, that the best graphics are in the mind and not on the screen.

You are just settling down in front of your television to watch yet another repeat of The Great Escape. Having seen it all before, you nod off... Awakening with a start, you find yourself in front of a battery of TV cameras, the star of the program. Around you is your living room but outside your window you rapidly find yourself in a German prisoner of war camp.

You know just where you are when the first person you meet is a dead ringer for Steve McQueen and he starts talking about finding a motor bike.

All is not plain sailing, as the plot includes nightmarish elements such as Daleks and Triffids, not to mention the second part that takes place in London and is reminiscent of the final episode of The Prisoner.

Although written using The Quill adventure writing program which has been used for many commercial games, the parser in this instance is limited to a fairly rudimentary verb/noun input. I found I wanted to expand my commands, but this may have been because I had been playing concentrated Knight Orc for some days previously.

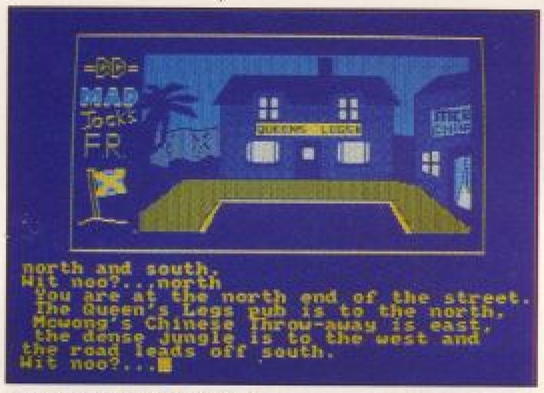
A novel system for movement is used that takes a few moments to get used to. Instead of typing in GO SOUTH or GO WEST (or S or W), locations accessible from your present position are highlighted in the descriptive text and typing the first four letters of these will take you to that location.

This is not the only way of moving around, as you can also use ENTER and EXIT. As there is no definitive indication as to when to use these, it is wise to try them everywhere to see if anything happens.

The idea of this being a TV set is well thought out and the atmosphere is enhanced by having phrases such as: "Standby! And cue the star!", "Camera! Lights! Action!" or "O.K. Ready when you are!" appearing after any responses – though they did become a bit boring after the first 50 repeats.

Screen layout is very important in text only games and on the whole Videoworld was quite good, the only fault being the whole screen scroll. You have to type in LOOK (or L) to re-read the location description for any exits or additional things to examine.

There is no RAM SAVE/LOAD facility but a tape SAVE takes only a few seconds. This is highly



Mad Jocks family reunion

recommended as several actions that can terminate your activities prematurely. It's an interesting program that is fun to play and not too expensive to buy. On the low end for presentation but hopefully Gonsoft will improve as time goes by. Available from: Gonsoft, 18 Lambert Road, Sprowston, Norwich, Norfolk NR7 8XP. Cost £2.50.

Are you serious?

Mail order adventures from small concerns can be a cheap way of supplying your adventure habit – they can also be a risky way of spending your money. One we received for review did not exactly inspire confidence right from the start.

It is a cassette adventure for CPC machines called Mad Jock's Family Reunion from Dented Designs. You would think that anyone sending in a game for review would try to get everything as well presented as possible, if only to try and impress the reviewer.

For starters, MJFR was on a tape that was too small to include the whole program and had to be turned over to load the final few blocks.

Your task is to find Jock's four sons and persuade them to visit the old man for the aforementioned family reunion. Finding them is not too difficult, but persuading them is another story. To get each one to Jock's, you have to find the right object to give to each son. Having given him this he will then go off happily to see his dad.

The game has simple graphics for several of its 60 locations. There is plenty of pseudo-Scots text, some of it quite funny. The only problem is that after several attempts I have not been able to complete more than one task before the game crashes. Perhaps they will send us another version when they have sorted it out. Perhaps it got corrupted in the post – but what if it didn't?



How dedicated to your adventuring are you? Reading just a few pages each month in your favourite magazines may be enough to keep your appetite whetted, but for some this is just not sufficient. Although one or two books make good reading, they can never be as up to date as a regular magazine.

Five regular publications cater exclusively for the adventure player. They all cover the complete range of home computers so although not dedicated to the Amstrad, there will always be some games each month that are applicable even if they have been played on another machine.

The five are What Now?, Adventure Probe, Soothsayer, Questline Chronicles and The Adventurer's Club newsletter. What Now? is the most professional, with over 60 A4 typeset pages of hints, solutions, maps, reviews and general adventure news. It has grown from its 20 A5 duplicated pages to what it is today in just about two years.

Its present incarnation is available in selected computer shops and there would seem to be plans for wider distribution – I just hope they can keep going as production costs cannot be cheap. Cost of a six issue subscription is £10.50, from: H & D Services, 1338 Ashton Old Road, Higher Openshaw, Manchester M11 1JG.

Adventure Probe and Soothsayer are both edited by Sandra Sharkey (she wrote The Case Of The Mixed Up Shymer). Adventure Probe has 40 A5 duplicated pages and has hints, solutions, articles and general adventure chat. Soothsayer has the same format but is dedicated to maps and solutions. Each will cost you £1.25 an issue from Sandra Sharkey, 78 Merton Road, Highfield, Wigan WN3 6AT.

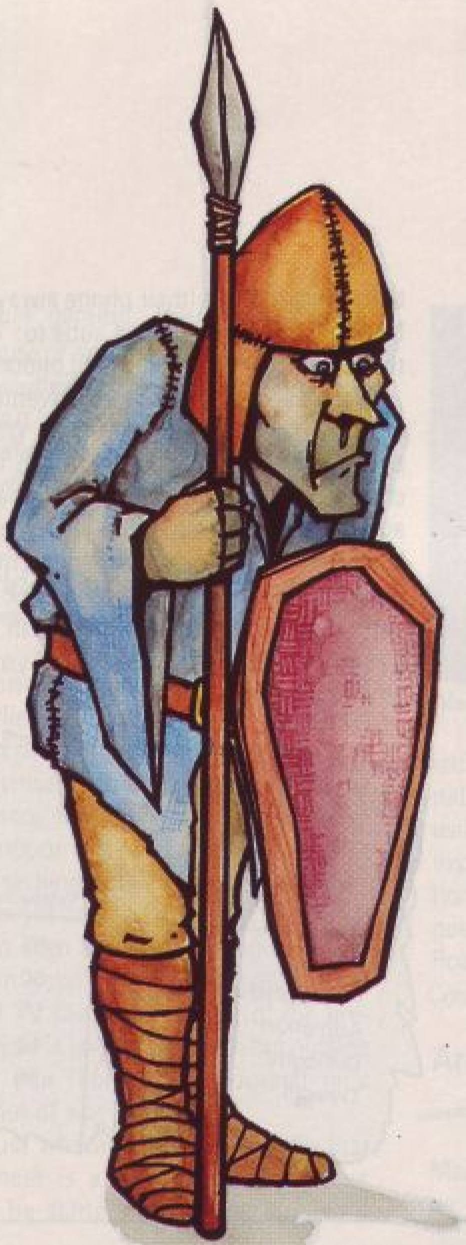
Questline Chronicles is edited by Jean Thorne and has an A5 format with about 40 duplicated pages. Like Adventure Probe, it covers a range of topics but usually with more pages of hints than AP. Cost is £6 a year (issues come out bi-monthly). From: Questline Adventure Club, 34 Crossgates Ring Road, Leeds, West Yorkshire, LS15 8RD.

THE Adventurers Club has had a chequered career, and had a few problems a year or so ago but seems to have now stabilised its operations. The newsletter format is A5 and there are about 48 pages of well duplicated general adventure info and solutions. There are also usually several pages of discounted software. Write (their phone always seems to be engaged for their latest subs to: The Adventurers Club, 64c Menelik Road, London NW2 3RH.

There used to be another adventure fanzine called Orcsbane edited by Nick Walkland. 40 pages of A5 duplication, Orcsbane had a zany character all of its own and it is sad that it was not able to continue into 1988. The technical problems that have caused its demise may well be overcome during the year and Nick would like very much to start up again with a regular/irregular newsletter. We'll let you know if anything appears.

RATINGS

	Knight Orc	Videoworld	Mad Jock's Family Reunion
Plot	75	52	48
Atmosphere	78	60	45
Addiction	80	55	52
Difficulty	80	62	60
Overall	78	56	47



A way with dragons...



If you are an adventure buff or an adventure duffer there are some useful tips to be picked up. Pat Winstanley helps you on your way

SUCCESSFUL adventure writing, as with any other type of programming, depends upon the initial planning and structuring. The simplest and most effective method is to break the various sections of the program into separate parts, then develop each one individually, testing and debugging as you go.

Then, when you come to fit all the pieces of the jigsaw together, all you need to do is to change a few lines to reflect the presence of other parts of the program, and away you go.

Figure 1 shows the simplified structure of any adventure program. Each of the separate sections will be dealt with in turn, until a skeleton adventure has been produced. This structure you can use repeatedly, adding flesh to the bones to produce the adventure your creative talent has devised, be it in space or a sword and sorcery fantasy.

Initialisation

Any adventure is effectively a collection of information (a database) and a set of instructions telling how the information is to be manipulated (the interpreter). At the moment we are not concerned about the actual information involved, as this will change according to the story being written. What we are concerned with is the way the information is stored in the database, and retrieved from it.

Perhaps the simplest system is to use arrays. If you have never played around with arrays before, don't worry. All but one of the ones used in our skeleton is one-dimensional, that is a simple numbered list.

For example, any adventure will have a number of locations (or rooms) which the player can move between by typing in compass directions. So our database needs to hold a list of the locations used in the game, and a note of where each move from that location would take the player.

Similarly, the database needs information on the objects used in the game, where they will be placed, the vocabulary that the player will be allowed to use, and the text of any messages telling the player what is going on.

Initialisation is mainly concerned with setting up the arrays and reading information into each one. Look at the listing and you will see three main subsections in the INITIALISATION section. Don't worry about lines 70 and 80 for now (we'll come back to them later).

Lines 90-130 are not strictly necessary in a completed adventure, as they define variables which we will use instead of absolute numbers. The main reason for keeping these lines is that during the development of a game it is often necessary to add extra messages, rooms and so on. As you will see later, the values of these variables are used over and over in the complete program, mainly in the form of;

"FOR x=1 TO numberofsomething"

It would be very tedious, and likely to cause errors, if the addition of one extra message entailed changing of perhaps 50 program lines by hand. Using variables means the computer does all that work for you.

Lines 140 to 210 dimension arrays to hold all the data needed in the game. Thus, line 140 sets aside space to hold all the nouns in a list which can be later "looked-up" like a dictionary.

At the moment only one noun is in the program, so the list is only one element long. As more are added the size of the array will increase (if you remember to change the value – numnberofnouns – in line 90), but all the space will be used as the array will only just be big enough to hold the list, with no wasted empty elements.

Lines 220 to 260 go hunting for data statements (line 2280 onwards), read the data there, and store it in the relevant elements of the appropriate array. (The READ instruction lines should be laid out in the same order as the DATA statements themselves so that information is stored in the appropriate section. Otherwise you are likely to start getting room descriptions sitting in the verb array)

Line 70 sets the number of the room that the adventure will start in, and line 80 will be used for

1. INITIALISATION
2. DESCRIBE ROOM
3. GET PLAYER'S INPUT
4. PARSE INPUT
5. ACT ON INPUT

Figure I: Skeleton structure

showing exits from each room during the game.

Setting up and filling the various arrays is done only once, when the program is first run. From then on, all the lines that we've looked at so far can be disregarded.

Describing the location

Now that all the arrays are set up, we have a database of information nicely ordered and numbered. To get at any element of any array all we need do is tell the computer which type of information we want, and which number in the list corresponds to the desired element.

You could find out what number is allocated to each element by counting them in the order of their places in the data statements. A much easier way though is to ask the computer to list and number them for you using a modified form of lines 220-260. RUN the program so far then break out of it by pressing ESC twice.

If you have a printer copy each of the lines 220 to 260 as direct commands (without line numbers) replacing READ in each line by PRINT #8 followed by the counting variable used in the line. Thus to list out the messages with their numbers you would use;

```
FOR a=1 TO numberofmessages:
PRINT #8, a;m$(a):NEXT
```

If you don't have a printer, miss out #8, and copy the numbers down from the screen.

Right, let's tell the player where he is. The array room$(x) holds the text describing all the rooms in the game. Each value of x from 1 to numberofrooms will access a different room description. Now we have already said that room=1 in line 70, so in line 300, room$(room) is actually saying room$(1), which is the first element of the room$ array.

Line 300 prints the text for room 1 as in the little listing session we did a minute ago. As the game progresses the value of the variable 'room' will change, and so line 300 will print different descriptions at different times depending on the value of room at the time.

Next we want to show possible exits from each room. This could be incorporated into the room description, but would be pretty wasteful of memory, as the same six words would be repeated over and over again. So why not just store the relevant six words once each and draw on that small store as required? This store is the variable d$ which we set up in line 80.

To decide which exits are relevant to the room we're in, we have to look at the mvtab (movement table) which was set up in line 170.

If you look at the printout I suggested earlier, or line 2310 of the program, you'll see that six numbers follow the room description. The first indicates the number of the room which would be reached by going north, the second number by going south, the third number by going east and so on

At the moment all the numbers are zero, which means no room can be reached in any direction; fair enough since we only have one room so far. Change line 100 to read numberofrooms=2, then insert a new line in the data section and change the existing entry as follows;

```
(change) 2310 DATA ROOM1,2,0,0,0,0,0
(insert) 2311 DATA ROOM2,0,1,0,0,0,0
```

Now run the program again, and look at the room description given on the screen. You should have North listed as an exit, and if you type north you should move to room 2 where South will be listed as an exit.

Of course there's nothing to stop you making the exit from room 1 being south to room 2 as well as the exit from room 2 being south to room 1... the basis of many an un-mappable maze. Play about with those two data lines until you are quite clear about what they do.

OK? Back to looking at line 320. This looks in the movement table for the room we're now in, and checks each direction to see if another room is listed (that is, a number greater than 0). If so, it pulls the relevant direction word out of d$ (the spaces in this string are important), and prints that word on the screen. Then it goes round the loop again looking at the next direction until it has done so six times.

While going through the loop a variable, printflag, is increased each time a valid exit is found. If no valid exits are found then printflag will be zero when the loop has finished. If printflag is zero then line 340 comes into operation and prints the relevant message. Line 350 sets printflag back to zero for the next time a room is described.

We also want to tell the player what objects are visible in the room. To do this we look at the information stored in the array called objloc. This array holds a number for each object which can be anything in the range −2 to numberofrooms.

The figure −2 signifies that the object is being worn, −1 means it's being carried, 0 means it isn't to be found anywhere in the game yet, and any other positive number is the number of the room where the object is at the moment.

The loop in lines 370 to 390 looks at each object's location in turn in order to find which objects are in the current room. If it finds an object whose location number is equal to the current room number (room) then it prints the text description of that object on the screen.

As with checking for exits, a flag, objfound, is increased each time an object is found. If nothing has been found then the word "nothing." is printed, and the flag is reset ready for next time. So now the player knows where he is, where he can go, and what objects are available.

Get player's input

Communication between the player and the computer is via the keyboard, so we must set up a system whereby the player can type in a command which the computer will then try to carry out. This is catered for initially in lines 560 to 680.

Lines 590 and 600 wait for the player to type something, then turn the command into upper case letters which we shall be using in the parser. Then line 610 shoots off to the parser where the player's command is split into verbs and nouns understood by the program.

We'll look at this in more detail in the next section, suffice it to say that after the input has been parsed we will have a verb and two nouns. Each of these will contain a number which relates to a word, or zero which indicates no word.

Line 630 checks the verb returned by the parser. If it is less than 7 then it is a movement verb, and the computer is directed to line 650. Here the verb number is used to find the corresponding exit from the current room.

If the exit gives a number greater than zero that number is the number of the room to which the player should be moved. This is achieved by changing the value held in the variable room to the number of the new room. Additionally mvflag is set to 1 to indicate that a move has been made.

When line 650 has been acted on, or if it wasn't possible to act on it, line 660 is checked. Here the computer finds if a move can be made and if not (if mvflag=0) prints a message to that effect.

Responding to input

If a move can be made line 670 resets the mvflag to zero ready for the next input, and sends the computer off to line 270 which will print a description of the new room before asking for a new command from the player. If a move hasn't been made because the exit was invalid, line 420 send the computer back to the beginning of the input routine for another command from the player, but doesn't change the current room number or describe the room again. (We've already told the player in line 660 that no move is possible.)

So that's how the player is moved around the game, but what if the command typed in was something other than a direction? Here we come to a bit of structuring that makes the game run more quickly, and makes programming much easier.

For each verb that the player can use in the game we set up a subroutine. When the input routine finds a verb other than a direction it looks at line 640, which directs it to the verb routines at lines 1020 to 1070. Here we have a list of the line numbers where the various verb subroutines can be found.

Each valid verb is allocated a number when the game is initialised, according to its position in the array. Line 1050 checks the current value held in verb and counts along the list of numbers after ON verb GOSUB until it finds the line number for the verb involved.

Thus if verb=3 the third line number would be selected. If verb=23, then the twenty-third line number in the list would apply.

We don't actually have any verbs in the game at the moment other than direction verbs. These are not strictly necessary in line 1050 as any movement would have been taken care of already in the input routine, but as the direction verbs are held in the verb array they do have numbers. Because of the way the parser works it would be awkward to omit them from the verb array, so we leave them in as dummies.

Once the relevant verb subroutine has been accessed and any necessary action taken, control is passed back to line 1050, and from there back

➤

to line 640. Here we jump back to line 420 which is the start of the high priority conditions.

These will be conditions checking things like whether or not the player is starved, or drowned, and so on. They are checked before the "What now?" prompt appears so that things can happen before the player has a chance to give another command. Once all the high priority conditions have been checked, control is passed back to the input routine at line 560.

The parser

Now we reach the most fiddly bit of all.... teaching the computer English! Of course, we can't actually teach the computer a new language in a simple program like this. What we can do is tell it how to split the player's command into normal grammar.

As this article is intended for beginners, we'll keep the parser as simple as possible. You won't be able to get the computer to understand sentences like: "Plant the pot plant in the plant pot", but it will be able to understand something like, "Throw the sheet through the window".

In the second command we have a verb (throw) and two nouns (sheet + window). The other words in the command are superfluous (the + through) so we want the parser to be able to recognise them as such and discard them. We also want to ensure that verbs are recognised as verbs and not nouns, and vice versa. So how do we go about it?

Well, the first thing is to decide what we want the parser to produce for us. In this case we always want a verb (either direction or other), usually a noun, and sometimes a second noun. Thus "Throw" on its own is pretty meaningless – we need to know what the player wants to throw, in this case a sheet.

But where does the player want to throw the sheet... on the floor, over the bed, through the window? In this case we need a second noun to indicate precisely what the player wants. So we want the command "Throw the sheet through the window" to be broken down into;

verb = THROW
noun = SHEET
noun2 = WINDOW

It doesn't really matter in this case which noun is which, as the intention would be pretty clear... you wouldn't (unless utterly frustrated) try throwing the window through the sheet, but there are circumstances where it might make a difference. For instance "Pour water into acid" and "Pour acid into water" could give entirely different effects, one diluting the situation and one exploding it! So we do want to be able to allocate the nouns according to their order in the command and hence their meaning within it.

The structure of the parser is as follows:

1. Take the first word of the input.
2. If it's a separator (for example AND,IN,THROUGH) ignore it and look at the next word.
3. Having found a non-separator, check the word against the verbs in the game to find a match.
4. If a match is found allocate that word number to be verb.
5. If no match is found tell the player that no verb has been typed and ask for a new command.
6. Repeat steps 1 to 4 for noun and noun2.
7. Return to the input routine.

The parser itself is in two parts. The first, in lines 720 to 800, takes the player's typed input, splits it into words by detecting spaces, then places each word found into the array word$. It then truncates each word using LEFT$ to give just the first four letters. So what we have now is a list of four letter words (or part words) laid out in the array in

the order they were typed. The second part of the parser is split into several sections, each concerned with allocating one of the words in the word$ array to be a different part of speech. The variable 'pointer' is used to indicate which word in the word$ list is currently being considered.

Making a parse

So we begin in line 810 by setting the pointer to 1. Line 820 checks to see if word$(1) is an empty string (no word) and if so makes a return to line 610. Assuming that word$(1) does contain a word, a check is made via line 830 to make sure that the word is relevant – not a separator.

If in line 1000 a match is found in the selection of separators, the pointer value is increased by one so that the word currently considered is ignored and the next word considered instead, the RETURN in line 1010 taking us back to line 830. Got that? Good... give yourself a pat on the back... you deserve it.

On reaching line 840 we know that the word indicated by the value of pointer contains at least one letter and is not a separator. Since the verb is normally the first significant word in any command, we'll try first to match our pointed word to a word contained in the verb$ array. This is attempted by the FOR NEXT loop in lines 840 and 850. If a valid verb is found, the variable is given the number which corresponds to the verb's position in the verb$ array. Also the pointer is incremented so that the next word$ entry can be considered. A jump is then made to line 880 ready to begin looking for nouns.

If the search to match a verb$ entry to a word$ entry fails, line 860 is reached. Here the parser decides that the first significant word in the word$ is not a valid verb, so it increments the pointer and repeats the process with the next word$ entry.

This it will repeat 10 times (10 words being usually more than enough for the player's input line). If after 10 word$ a verb match has still not been found, line 870 tells the player so and returns to wait for another command.

Noun found

Exactly the same procedure is followed in lines 880 to 930, except that in the event that no noun is found this is not reported since not all commands need a noun (for example I for INVENTORY, L for LOOK, N,S,E & W for movement).

If no noun is found a return is made to the input routine, but if one is found a further search is made of the word$ list in case a second noun was typed. This takes place in lines 940-980, after which no further matching attempts are made.

Once the parser routine has been completed, we will have three variables, each holding a number which indicates which words of the game's vocabulary have been typed – verb, noun & noun2. If no valid verbs were found, verb will hold zero. If no valid nouns were found, noun and noun2 will each hold zero. If only one valid noun was found noun2 will hold zero.

These variables are now ready for use. We've already seen how the movement routine swings into action if the parser returns the value of verb as less than 7, and how the ON verb GOSUB routine in line 1050 uses the number held in verb to choose the correct subroutine... now we can begin to use the nouns too and create a game with real puzzles.

That's all for this month. Next month we'll look at how to get the player's input, parse it and act on the result. The full listing is printed here so that you can get cracking and build your own game.

```
10 REM ************************
20 REM       ADVENTURE SKELETON
30 REM
40 REM ******************************
50 REM          INITIALISATION
60 REM ******************************
70 room=1
80 d$=" North South East  West Up
   Down"
90 numberofnouns=1
100 numberofrooms=1
110 numberofobjects=1
120 numberofverbs=6
130 numberofmessages=1
140 DIM noun$(numberofnouns)
150 DIM word$(100)
160 DIM room$(numberofrooms)
170 DIM mvtab(numberofrooms,6)
180 DIM objtxt$(numberofobjects)
190 DIM objloc(numberofobjects)
200 DIM verb$(numberofverbs)
210 DIM m$(numberofmessages)
220 FOR a =1 TO numberofrooms:READ roo
    m$(a):FOR b=1 TO 6:READ mvtab(a,b)
    :NEXT:NEXT
230 FOR loop=1 TO numberofobjects:READ
     objtxt$(loop):READ objloc(loop):N
    EXT
240 FOR c=1 TO numberofverbs:READ verb
    $(c):NEXT
250 FOR a=1 TO numberofmessages:READ m
    $(a):NEXT
260 FOR a=1 TO numberofnouns:READ noun
    $(a):NEXT
270 REM *************************
280 REM          Describe Room
290 REM *************************
300 PRINT room$(room)
310 PRINT "Exits : ";
320 FOR n=1 TO 6:IF mvtab(room,n)>0 TH
    EN PRINT MID$(d$,((n*6)-5),6);:pri
    ntflag=printflag+1
330 NEXT
340 IF printflag=0 THEN PRINT "There d
    on't seem to be any!"
350 printflag=0
360 PRINT "You can also see : ";
370 FOR a=1 TO numberofobjects
380 IF objloc(a)=room THEN PRINT objtx
    t$(a);"":objfound=objfound+1
390 NEXT
400 IF objfound=0 THEN PRINT "Nothing
    at all":objfound=0
410 objfound=0
420 REM *****************************
430 REM        HIGH PRIORITY
440 REM *****************************
560 REM **************************
570 REM              Input Routine
580 REM **************************
590 INPUT "What now ";user$:user$=UPPE
    R$(user$)
600 IF user$="" THEN GOTO 590
610 GOSUB 690
630 IF verb<7 AND verb>0 THEN GOTO 650
640 GOSUB 1020:GOTO 420:REM Verb subro
    utines, then new input request.
650 IF mvtab(room,verb)>0 THEN room=mv
    tab(room,verb):mvflag=1
660 IF mvflag=0 THEN PRINT "You can't
    go that way."
670 IF mvflag=1 THEN mvflag=0:GOTO 270
680 IF mvflag=0 THEN GOTO 420
690 REM ******************************
700 REM              PARSER
710 REM ******************************
720 comm$=user$
730 verb=0:noun=0:noun2=0:FOR a=1 TO 1
    00:word$(a)="":NEXT
740 IF LEN(comm$)=255 THEN comm$=LEFT$
    (comm$,(LEN(comm$)-1))
750 comm$=comm$+" "
760 tempn=1
770 x=1
780 FOR n=1 TO LEN(comm$)
790 IF MID$(comm$,n,1)=" " THEN word$(
    x)=MID$(comm$,tempn,n-tempn):word$
    (x)=LEFT$(word$(x),4):tempn=n+1:x=
    x+1
800 NEXT
810 pointer=1
820 IF word$(pointer)="" THEN RETURN
830 GOSUB 990
840 FOR x=1 TO numberofverbs
850 IF verb$(x)=word$(pointer) THEN ve
    rb=x:pointer=pointer+1:GOTO 880 EL
    SE NEXT
860 IF pointer<11 THEN pointer=pointer
    +1:GOTO 840
870 IF pointer=11 THEN PRINT "I can't
    find a verb":RETURN
880 IF word$(pointer)="" THEN RETURN
890 GOSUB 990
900 FOR x=1 TO numberofnouns
910 IF noun$(x)=word$(pointer) THEN no
    un=x:pointer=pointer+1:GOTO 940 EL
    SE NEXT
920 IF pointer<11 THEN pointer=pointer
    +1:GOTO 900
930 IF pointer=11 THEN RETURN
940 IF word$(pointer)="" THEN RETURN
950 FOR x=1 TO numberofnouns
960 IF noun$(x)=word$(pointer) THEN no
    un2=x:RETURN ELSE NEXT
970 IF pointer<11 THEN pointer=pointer
    +1:GOTO 950
980 RETURN
990 a$=word$(pointer)
1000 IF a$="AND" OR a$="THE" OR a$="TH
     EN" OR a$="," OR a$="." OR a$="TO
     " THEN pointer=pointer+1
1010 RETURN
1020 REM *****************************
1030 REM           VERB ROUTINES
1040 REM *****************************
1050 ON verb GOSUB 590,590,590,590,590
     ,590:RETURN
1060 PRINT " I don't know how to do th
     at YET!"
1070 RETURN
1080 REM *****************************
2280 REM *****************************
2290 REM           GAME DATA
2300 REM *****************************
2310 DATA ROOM,0,0,0,0,0,0
2470 DATA object,1
2560 DATA "N","S","E","W","U","D"
2570 DATA "Message."
2760 DATA "NOUN"
```

Wheel meet again



Ian Rook reveals Amstrad's secret project

HAVE you ever wondered what happened to the C5? Well the rumour I've heard is that Victor Kiam ("I liked the product so much I bought the company"), also liked the C5 enough to import them for use as American golf trollies. He didn't restart production. That is about as likely as Alan Sugar buying one of his razors, so the C5 has gone the way of the dodo, the acoustic modem and the QL.

That is until now. The C5 was the first in a series of "cars", the others being called the C10 and C15. These are still on the drawing board despite a thinly disguised appeal for cash in the shape of a Tomorrows World feature on the two planned vehicles.

The main problem with the C5 was range. Now through a clever bit of market manipulation Alan Sugar looks set to revive the idea. If you think about it, a car can only do about 300 miles on a tankful of petrol. You call into a garage and fill up. However you don't have garages 300 miles apart – they are everywhere. You could easily drive from one to another in a C5 if you stuck to the suburbs of Britain's major conurbations.

The idea is that every garage will stock charged C5 batteries. When it runs low you pull in and exchange your flat battery for a charged one, then drive off, having paid the garage a fee.

This idea was not Alan Sugar's, it comes from Dr Wendy Mountford, an ex-Sinclair Vehicles research assistant.

A very bright young woman whose electronics skills are much appreciated, in fact many hardware engineers have been heard to comment that the sun... well let's just say there were plans to build her a C5 with solar cells on the seat.

Several improvements have been made to the new C5 which is to be marketed by Amstrad. The name has changed to the A5, because the new boss is Alan, not Clive.

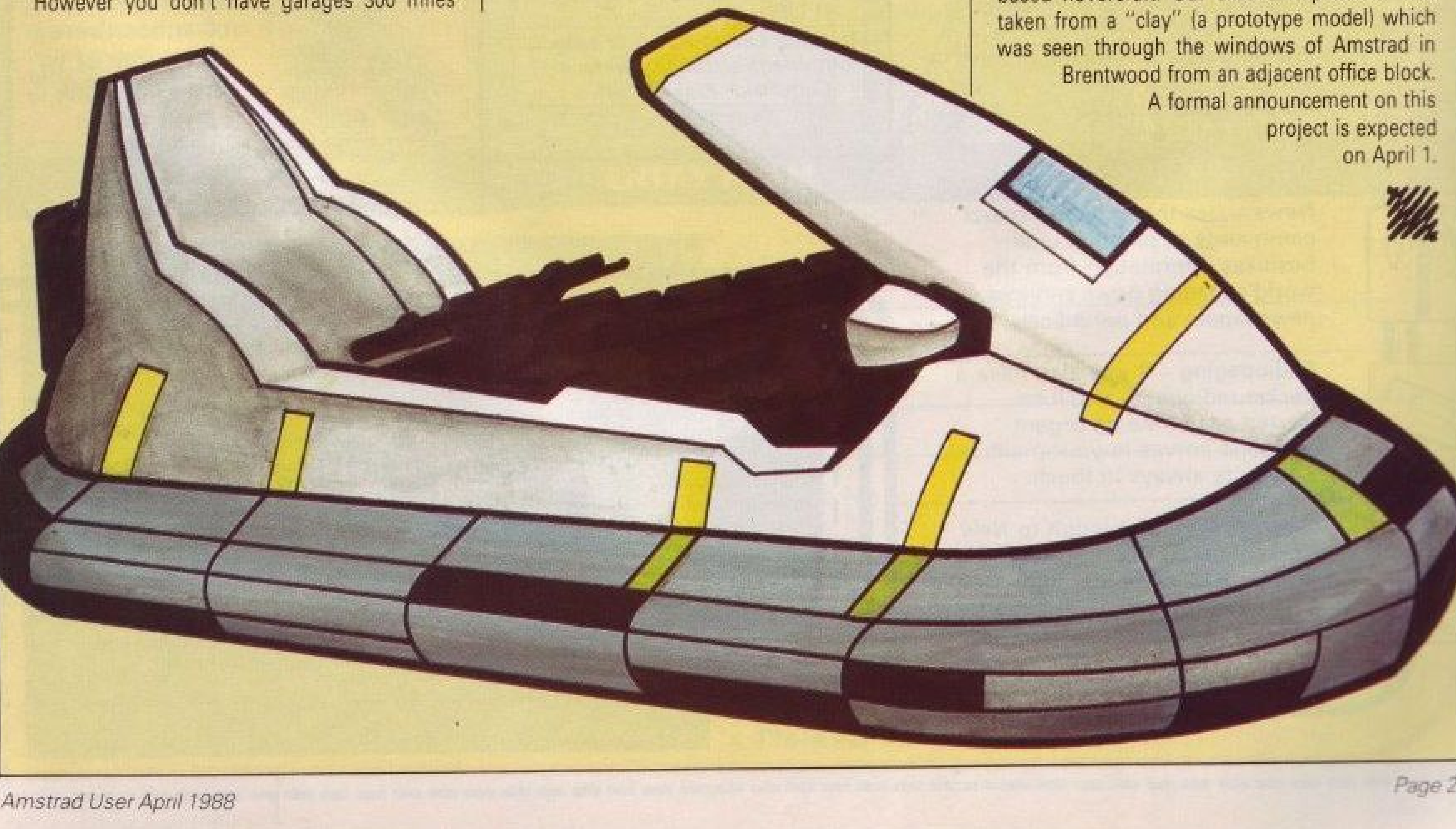
Field tests have shown a number of problems with the design. Based on the world's largest injection molded shape, the body held rigid, but the chassis often failed to cope with the strains imposed by cornering hard. This could lead to underinflated tyres rolling off the rim.

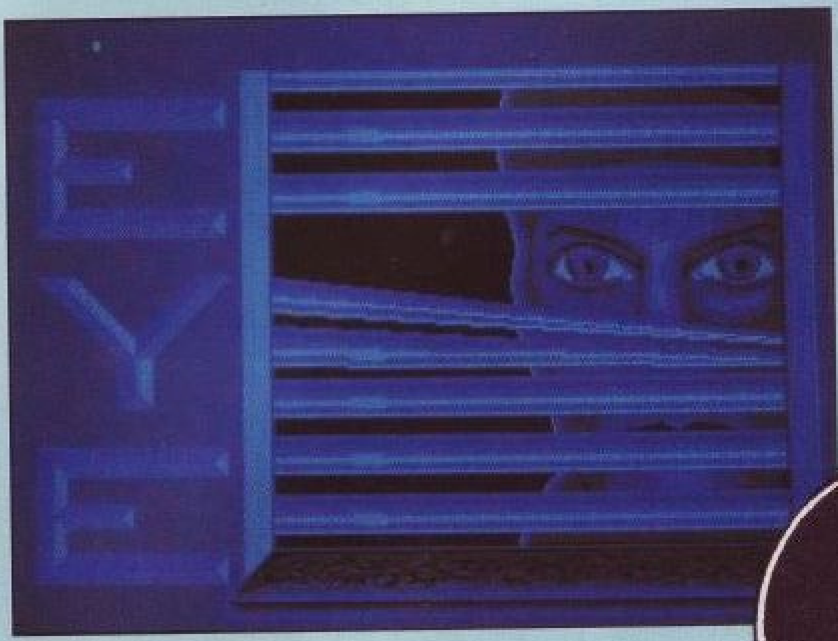
To combat this an extra drive shaft has been fitted from the washing machine-type motor at the rear to the front, steered wheel. A differential ensures that there is no torque-steer while the extra grip afforded by the 50 per cent increase in powered tyre area reduces the forces on the rear tyres and increases traction, so enabling the A5 to climb hills.

Amstrad will be keeping a close watch on the budget speech with regard to the laws surrounding A5 type cars. A few years ago the Chancellor announced the lifting of road tax on electric vehicles. With the increased pressure from the green parties it looks as though there may be concessions for the use of unleaded petrol.

If this does happen work will progress on the most ambitious project. The AH5. This is an A5 based hovercraft. Our artist's impression was taken from a "clay" (a prototype model) which was seen through the windows of Amstrad in Brentwood from an adjacent office block.

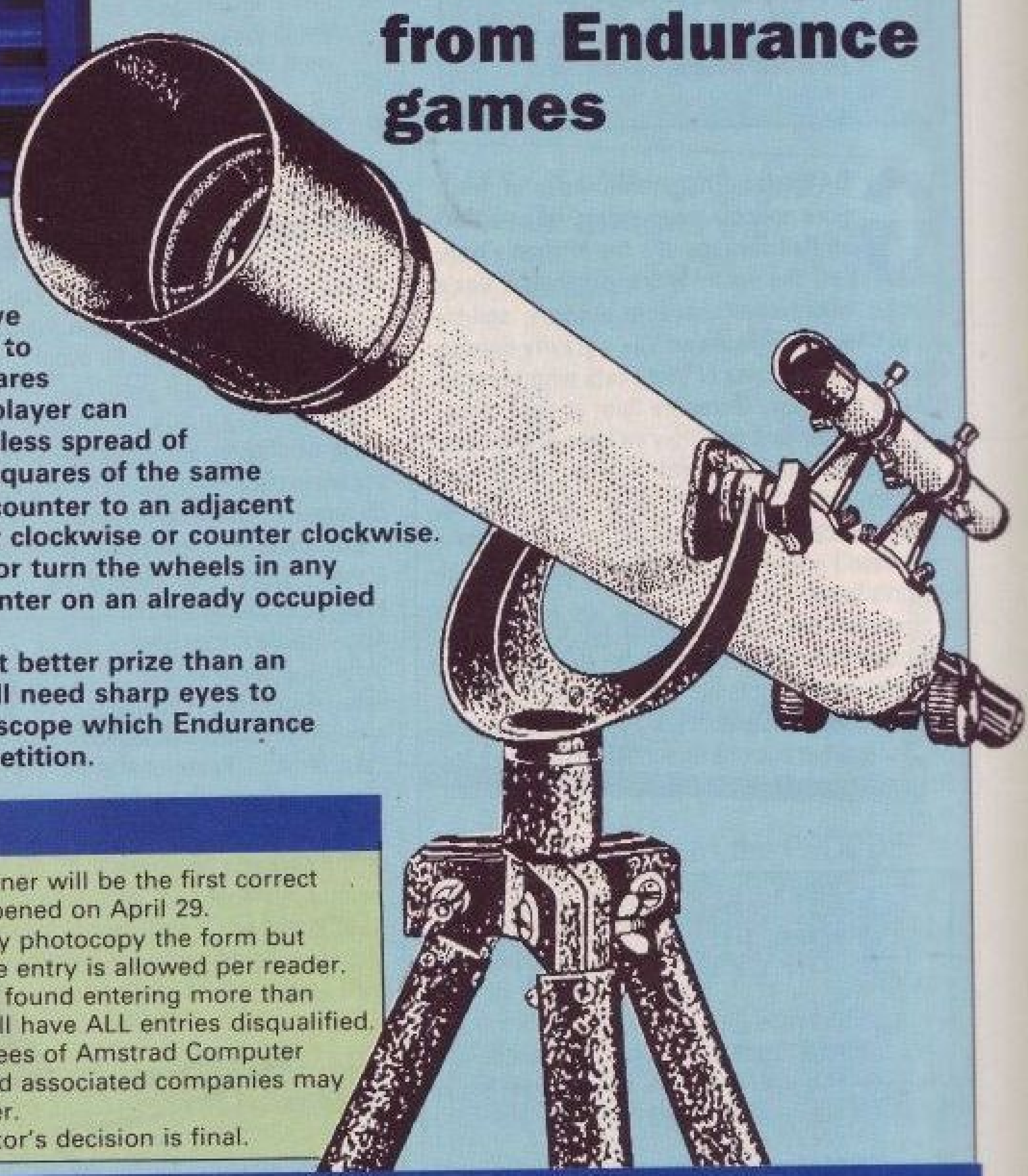
A formal announcement on this project is expected on April 1.





Better than a poke...

Win a telescope from Endurance games



Eye is a board game with a difference. It's not just the players which move, the board does as well. Not in a hocus pocus ouija kind of way. As you move your counters on the board your opponent can plot to move one of the two rings which divide up the squares on the board. As in so many classic games a good player can turn an enemy's domination of the board into a useless spread of counters. The idea is to get all your counters onto squares of the same colour. A move is made by moving a player's own counter to an adjacent square or by moving one of the spiral wheels either clockwise or counter clockwise. A player on their turn may move the counters and/or turn the wheels in any combination. A player is not allowed to place a counter on an already occupied square, nor to jump over occupied squares.

Eye is a challenging and absorbing game, so what better prize than an entry into a challenging and absorbing hobby. You'll need sharp eyes to make the best use of the Tasco 30-90 x 60 mm telescope which Endurance Games is offering as first prize in an amazing competition.

HOW TO WIN

Look at the screen shot shown below. You have to mark on it what moves you would make in this position if you were the blue player. We have decided what they should be and the answer which comes nearest to our selection will win the telescope, and for those cloudy nights a copy of the board game. The next ten entries drawn will win a copy of the board game.

RULES

1. The winner will be the first correct entry opened on April 29.
2. You may photocopy the form but only one entry is allowed per reader.
3. Anyone found entering more than once will have ALL entries disqualified.
4. Employees of Amstrad Computer User and associated companies may not enter.
5. The editor's decision is final.

ENTRY FORM



Name____________________

Address____________________

____

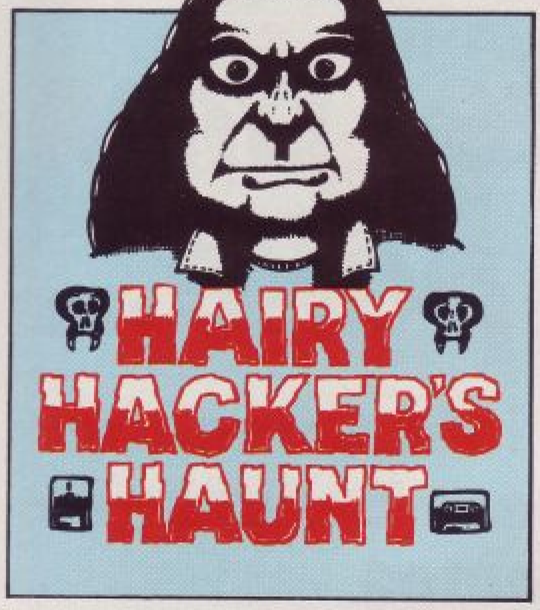
____

Phone No.____________________

Send to:

EYE/Amstrad User Competition
169 Kings Road
Brentwood
Essex
CM14 4EF

4.88(9)



Fire burn and cauldron bubble...

Vax serves up some savoury pokes

G'DAY folks. This month we're in much more amiable surroundings than a British Rail carriage. It's the kitchen's turn. Yes, the room which originated Vax's snacks, microwave erasable eproms, sell-by soup, Chili con Pigeon and Vax's gravity-defying beer. Also, the home of three cats who seem to be able to occupy the entire floor at once, possibly due to the fact that they've been at the beer.

A good month for the stomach and tastebuds, but not a good month for your letters. Due to circumstances beyond our control (the Ed), my mail hasn't got to me, and this includes most of Justin's latest.

However, the frantic search for the missing envelope did reveal a letter from Bob Crawford, though how it got behind the bread bin I have no idea. This letter dates back to the 1/8th of an inch of dust era, but has one unpublished poke in it for Rogue Trooper. Rewind tape, press play, and run this:

```
10 MODE 1:OPENOUT "!D"
20 MEMORY &4FF
30 |TAPE:REM Disc machines o
   nly
40 LOAD"!rogue
50 POKE &697,6
60 FOR addr=&600 TO &607
70 READ byte$:byte=VAL("&"+b
   yte$)
80 POKE addr,byte:tot=tot+by
   te
90 NEXT addr
100 IF tot<>&1E6 THEN PRINT"
    Bob says look at 130 aga
    in.":END
110 CALL &500
120 REM Hi there
130 DATA 3E,00,32,54,35,C3,0
    0,2A
```

Thanks Bob. The Exolon poke was good too, but we've done that already. If you've settled in to your new accommodation and have your computer going, see if you can spare any more pokeykins.

Another letter from the same era from Martin Pickard pointed out to Miss Julie Boot that the ghost's weakness in Sultans Maze is that he can't walk through walls. There, pangs of guilt from late publishing evaporate. Speaking of evaporation, a slight carbonizing smell means that the treacle sponge has just boiled dry. Hang on a sec.

OK, slight change of plan. It's a toffee sponge. Despite the mail problems, some complaints have reached me basically saying that the Hairy Hacker's column is getting through cliches like they were going out of fashion. Well, don't worry, Hackfans. From now on, I'll avoid cliches like the plague.

Oh dear, I've just tried to pour myself out a glass of slightly ancient milk – and it tried to scramble back in again! Definitely a glass for the dishwasher; but where is she?

Enough of this, let's have some hints for Code Masters' Dizzy. The object of the exercise is to concoct the Abawiffovee Potion, the magikal equivalent of a Pan-Galactic. Gargle-Blaster, which kills off the evil wizard Zaks. Mr A. C. Peake of Mid-Glamorgan is to blame for the collection in the panel on the opposite page.

They should give you enough clues to get somewhere in the game without being told exactly how to do everything.

Mr. Peake has noticed two other things: Typing kevin into Cerberus will give you infinite lives, and on his copy of Barbarian pressing V in-flight gives THANKS V100857. Anyone know why?

Joining us for the first time in this column is a small, black, furry kitten called Bruno (Othello's grandson). Thanks a bunch Bruno. Go play in the blender while we get through Justin's next poke.

A rather interesting routine is this. It's a multi poke for Hewson's compilation tape, Four Smash Hits. It will, unfortunately, only work with three of the four games contained on the tape. These are :

Zynaps – Infinite lives
Exolon – Infinite lives, ammo, grenades
Uridium – Infinite lives.

It doesn't work with Ranarama, sorry It's a



DIZZY HINTS DEPT

The Raincoat	Stops raindrops hitting you (yes, well...)
Grease Gun	Allows the truck to move in the shaft
Bird Seed	Kills all white birds
Crowbar	Opens manhole cover (doesn't kill blackbirds)
Graveyard key	Opens graveyard. What else do you do with a graveyard key?
Insecticide	Kills all spiders (and pollutes the environment)
Emerald	It's hidden in the graveyard idol
Spade	Digs hole in hollow ground
Flame	Lights pot (not that sort man). This must be done last
Ghost eliminator	Kills ghost in tunnel
3 in 1 oil	Opens the drawbridge in the graveyard
Miner's hat	Stops you striking your head on icicles in the caves
Money purse	Give to hermit
Horseshoe magnet	Lifts gates in labyrinth
Mushroom spade	Moves one mushroom. Strange mushrooms...
Broken heart	Drop it by broken-hearted woman
Garlic	Wipes out bats (the black birds)
Bolt cutters	Cut the chain with this to cross the river
Dry ice	Freezes the waterfall
Rusty pick	Moves stones in the jewelled passage
Diamond	Moves the solid line bridge
Jewelled dagger	Cuts the rope on the floating raft
Amulet	Protects you from Zaks' lightning bolts
Empty bottle	What you put the potion in

Right, that's what things do. Now you need to know the ingredients to make the potion. No sell-by soup of mine ever got as bad as this:

Leprechaun's wig	In mine over bridge
Cloud's silver lining	Above the hermit's house
Troll brew	On the table in the castle. Under no circumstances should you attempt to ferment the troll
Duck's feather	In the graveyard

rewind the tape to the beginning for all three programs although it will skip the first file. Oh yes, nearly forgot, it is for the tape versions only (haven't seen the disc yet).

```
10 MODE 1:MEMORY 12345
20 LOAD "loader",&4000
30 a=16709:BORDER 0
40 IF PEEK(a)=&DD THEN RESTORE 220
50 IF PEEK(a)=&80 THEN RESTORE 240
60 READ m:MODE m
70 x=(15 AND m=0) OR (3 AND m=1)
80 FOR c=0 TO x
90 READ i:INK c,i
100 NEXT c
110 tot=0
120 RESTORE 260
130 FOR a=&80 TO &C3
140 READ b$:b=VAL("&"+b$)
150 POKE a,b:tot=tot+b
160 NEXT a
170 IF tot<>5914 THEN PRINT"Better che
    ck lines 250-340.":END
180 CALL &80
190 DATA 00
200 DATA 00,26,13,16,15,06,03,24
210 DATA 12,09,18,19,20,11,02,01
220 DATA 01
230 DATA 00,06,18,26
240 DATA 01
250 DATA 00,20,26,24
260 DATA 21,00,40,e5,3a,45,41,fe
270 DATA dd,28,13,fe,80,28,26,21
280 DATA 96,00,22,4e,41,c9,3e,c9
290 DATA 32,4e,60,c3,00,90,21,a5
300 DATA 00,22,53,41,c9,af,32,59
310 DATA 11,32,7a,1f,32,25,2a,32
320 DATA 25,2b,c3,00,01,21,bc,00
330 DATA 22,4e,41,c9,af,32,c2,5e
340 DATA c3,00,40,4a
```

Last month Sol demonstrated her ability as a literary critic. Recently, she demonstrated her ability as a feline art critic. This expensive (but hideous) glass vase would look much better as a (CRASH!) collage. Thanks again, Sol.

Now here is a really hot collection of pokes from Justin. Well, things tend to warm up when you leave them on top of the water heater.

A PROD routine for the tape version of OUT RUN, it will supply the user with infinite time. Use the latest version of the Prodder program.

```
200 DATA 32,32,5b,34,0e,34,5b,aa
210 DATA 00,01,ea,a9,0a,ab,85,aa
220 DATA af,32,53,22,c3,00,01
230 DATA 22b7
```

A PROD routine for use with the tape version of Gryzor. It will give the player Infinite lives.

```
200 DATA 31,32,5a,34,0d,34,5b,a6
210 DATA 00,01,ea,a5,00,a7,85,a6
220 DATA af,6f,67,32,26,15,22,2a
230 DATA 15,32,2c,15,c3,19,04
240 DATA 2426
```

A PROD routine for the cassette version of Super Hang On. It should be noted that the cassette version contains four separate games, all with their own loader. This is the first of four routines for this game, the other three are for use with the other race sections of the game. This part is for use with 'AFRICA'

```
200 DATA 31,32,5a,34,0d,34,5b,aa
210 DATA 00,01,ea,a9,28,ab,85,aa
220 DATA 3e,c9,32,7a,39,c3,00,01
230 DATA 2426
```

A PROD routine for use with Super Hang On, Asia Stage.

```
200 DATA 2f,32,58,34,0b,34,5b,aa
210 DATA 00,01,ea,a9,28,ab,85,aa
220 DATA 3e,c9,32,42,38,c3,00,01
230 DATA 2329
```

Super Hang on America section.

```
200 DATA 32,32,5b,34,0e,34,5b,aa
210 DATA 00,01,ea,a9,28,ab,85,aa
220 DATA 3e,c9,32,ae,38,c3,00,01
230 DATA 239e
```

Super Hang On, Europe section.

```
200 DATA 31,32,5a,34,0d,34,5b,aa
210 DATA 00,01,ea,a9,28,ab,85,aa
220 DATA 3e,c9,32,f1,38,c3,00,01
230 DATA 23de
```

Vax's list of things people fiddle DIP switches with:

Pencils, pens, paperclips, bits off of the printer that they don't know what else to do with, knives, forks, spoons, screwdrivers, cold soldering irons, hot soldering irons (once only), Kalashnikov bullets, scissors, souvenir poison darts from the F'kawi tribe, pliers, Blue Peter badges, fingernails, broken fingernails, sate sticks, porcupine quill, toothpick, lock-pick, the long screw that fell out from somewhere in the hard disc, a piece of wire not quite stiff enough for the job, another piece of wire that is too thick for the job, yet another piece of wire which disappears inside the machinery in a bright flash and puff of smoke, thereby obliviating the need to change the DIP switches.

Improved version of the PRODDER

This routine works exactly the same as the previous effort. This means that a PROD routine is tacked on to the end and used by rewinding the tape to the beginning and pressing play. It will work with all known newer Speedlocks so it should last a lot longer than the last one.

```
10 REM PRODDER v.3.1 (c) Justin for AC
   U
20 MODE 1:MEMORY 12345
30 tot=0:addr=&BE00
40 READ b$:b=VAL("&"+b$)
50 IF b>256 THEN GOTO 80
60 POKE addr,b:tot=tot+b
70 addr=addr+1:GOTO 40
80 IF tot<>b THEN PRINT"You had better
    check the data lines.":END
90 LOAD ""
100 CALL &BE00
110 DATA f3,21,10,be,3e,c3,32,32
120 DATA bc,22,33,bc,2a,3e,be,e9
130 DATA cd,37,bd,11,20,be,2a,40
140 DATA be,73,23,72,2a,42,be,e9
150 DATA dd,2a,44,be,ed,5b,46,be
160 DATA 2a,48,be,22,2f,be,cd,00
170 DATA 00,2a,4a,be,11,4e,be,73
180 DATA 23,72,2a,4c,be,e9
190 '
```

See you next month with the missing mail. I've got some washing up to do. Bye.



Amster's Cage isn't just about requests for help. There are also debates and discussions about more general matters. These letters came in after an article about the use of computers in education.

From IAN HOARE (THE CHEF)

I suspect that many teachers are mesmerised by the compartmentalisation which we, as a society, have lumbered ourselves with. We think in terms of chefs or computer programmers or journalist I can, and do, work in all three fields, with, I hope equal professionalism.

We think in terms of educational software and business software or leisure software. It doesn't seem to occur to many teachers that a program can be written for one purpose, but can be used, with a little imagination, in another.

Why is this? I suspect that it has to do in part with the lead taken by the BBC in their approach to computers in education. They have, to a large extent pioneered the whole field.

Teachers who are involved in full time classroom work just don't have the time, energy or, sadly, all too often, the expertise or imagination to break out of the mould.

My wife is a full time teacher. One might think that she is in a very good position to extend her use of computers, with a tame programmer on tap!

Yet by the time she has taught all day at school, seen 10 children with behavioural problems, marked her homework and prepared for the next day's teaching, she is too tired and drained to start thinking imaginatively about how she could use computers, even if, by chance the school would let her teach French in a room where there are actually some computers for her class to use.

She, like 99 per cent of other teachers, looks to educationalists to advise her on ways in which she might be able to vary and extend her teaching.

The trouble is that THEY are strait jacketed in their thinking, and don't have many useful ideas to offer. She has looked at software produced to help in French teaching (pigeonholing again) and frankly, it's awful. So she doesn't even try.

Computers are pigeonholed by her dept as being useless in practice for teaching languages. The same goes for other subjects, so they are locked away in a computer Studies room, where kids are taught computer studies, not that a computer PLUS appropriate software is a versatile, useful and non-frightening tool.

We may be better off than some countries, but that ISN'T literacy!!!

From MR D J SINCLAIR

I do not know how many of you are familiar with the BBC Micro or Master. It comes (the Master) with View on rom. In my opinion it is awful but has features that are quite good. I would count us CPC users lucky as we have Protext, Brunword or Tasword.

Even the latest attempt at a WP was not very exciting. In fact InterWord is nothing compared to anything on a CPC.

The BBC Master and BBC are meant to be better than the CPCs. I find this hard to believe, and as a monitor of the computer room at school I find the Acorn range of computers very dull. I wish the schools would wake up to the fact of the need of real world experience with IBM PCs and compatibles.

OK, I agree that the BBCs are a nice machine for an 8-year-old but the CPCs would be far better, maybe not for the range of software but for the sheer quality of it.

It is about time that ILEA and local authorities and the government re-thought their computer and technology ideas.

At the moment my school has five Masters and six BBC Micros, three printers, disc drives on all computers (Technomatic 40/80) and nothing much else. I feel the government funds are quite adequate. They offer to all schools in the ILEA area whether state or independent a grant which contains, one Citizen printer, one Pace DS/DD drive, box of 10 discs and some ribbons – OR a BBC Master with monitor instead.

I think that is quite a good deal for the schools. It is a pity about the quality of the software and hardware used in some schools. that is it. Sorry to be a drag.

● *Largely agree, though a package you describe is a MUCH better deal for a small school than a large one. Surely, what we need is LOTS MORE machines. What use is 1 Master for 1200 pupils?*

From MR R J LOBB

I totally agree with you about abuse of computers in schools. In many schools, computers are used to teach computer studies ie. programming using a strange language called Basic, rather than to concentrate on applications which may be of use in the future (although this attitude is changing).

The actual detailed operation would obviously change, depending on the package, but the overall technique would not. Whereas at the moment the knowledge gained at school is worthless.

Educational software is another problem. The quality of much of it is very poor. The cost is also too high, bearing in mind the cuts made in educational budget.

Teachers have little choice but to copy programs if they are to have a range of material to use. Without that range, evaluation is impossible, The BBC software houses do allow evaluation copies, but RML s/w houses do not. Hence in the ILEA little is being done at the moment to rectify this because of the vast numbers of relatively useless 380 & 480zs.

However, with the advent of the Nimbus machines things are looking up. The use of MS.dos will improve things greatly for applications. The Archie should also do the same for Control and Design.

● *Thanks. As you see, I'm largely in agreement. How do you think we can get LEAs to change their minds? What about Dave's main point about the pigeonholing of sw into 'Educational' and 'non Educational' being so daft!*

From DR MICHAEL SMITH

I was very interested, and encouraged, to read about the successful use of Viewdata with less

able children. I am attempting to promote a similar approach to IT training within YTS in the South-West, and have a couple of pilot projects on the go right now. I am sure this is a useful answer to problems of motivation etc.

● *Thanks for writing, Mike. Could you tell us more, please? The problem of motivation is enormous for some schools*

From DAVID FOSTER

Julian should be so lucky, to have that much Beeb equipment. We have 2 Beebs, 1 printer, 1 Electron and no disc drives! I hate tapes. Anyone got any 40 track single sided disc drives they don't want? I've got the interface. What makes it worse is that the two local comprehensive schools have in excess of 50 Beebs just sitting around in cupboards and store rooms doing nothing at all. Well they did have till one of the kids knicked them one night. They knew it was a kid, as he left the broken ones behind! They got them back eventually, though.

For some children the teaching of Basic can stimulate and challenge them to develop an interest in computers and who knows where that can lead you!

From my experience, the vast majority of schools don't even attempt to teach 'Computer studies'. the computers just sit there doing nothing, or at best get used to load educational programs that are simply 'Subject teaching aids' in much the same way as they use an overhead projector or Schools TV.

From MR D J SINCLAIR

Many schools are split on the issue of computers and new technology in schools. Some teachers want to keep old methods of education and others want new methods with the assistance of micros. This happened at my old school, there was a teacher who was pro tech and another anti technology as the Anti-computer teacher was the Vice master things got very sticky and they sometimes argued in front of pupils, the split amongst the rest of the staff was half and half but some were in a way licking up to the Vice master. All the pupils agreed with the Pro-computer teacher. You see it is not only local authorities but the whole attitude in this world towards new technology has to be changed. I still don't know why people still don't understand the need for computers in this world in both home, offices and educational arena.

●*Thanks for that, Julian. You're right I think, in many ways. I was talking to Jacquie about this. Most of the teachers don't know anything about computers and are just too pressured to learn.*

From THE MAD SYSOP

1. lotta letters today!
2. Was that really from Julian?!
3. My mum's school has just bought an Archie. for the ART department ! 1 of only 2 in Stockport, I hear. (Other is at the Teacher's Centre) Wonder just how well it'll be used.
4. Ref Beebs/CPC in schools – people forget that until the beeb, there was NO reliable micro at a reasonable price with comparable features.

From MR S J DIBBLE

About the subject of misuse of computers in schools,I know as fact it can get to extremes. For example, CPVE and TVEI were two subjects being taught in my old school.Both of these involved computing, but all anyone ever did was play games on them.

With the exception of a couple who were really interested in learning, the others just used it as time off.

● *That's a shame. What sort of sw did they use in the computers for the odd serious user.*

From M J HOWARD

One way of getting more good micros into schools is to use the additional funding now coming on stream through TVEI extension funding. Most LEAS will be getting several million pounds for this as their schemes are accepted, and acceptance depends upon info tech elements in the course submissions (inter alia).

We have had the good luck to be a pilot school for this project, and have had two full Nimbus networks as a result – some 20 machines plus HDs plus other goodies.

The next point is how to USE them: how many schools have micros in home economics rooms, or use networked Nimbuses (Nimbi?) in teaching PE? Ours does, and mainly because they are there, available and not locked up in a "maths dept only" box, as they are in too many schools.

We have a computer systems room which is bookable, like a library or video room in other schools, and distributed networks to other areas who ask for it.

Our most commonly used programs are Wordstar and the Nimbus bundled graphics package. Almost nobody uses dedicated "educational" (yawn) programs.

Viewdata – yes, great but how do you make it accessible to many unless you have adequate machines? – glad to say our school magazine 'Broctel' appears on a networked viewdata system accessible from the library and elsewhere.

Careers information, sports fixtures, clubs, events... all go out live to our students. Sounds wonderful doesn't it? Point is that a really big cash injection is needed to start the ball off, after that it becomes self-sustaining. Processing power is a normal resource for both teachers and students here.

Most schools will be getting this extra TVEI cash soon, someone ought to be pressuring them to spend it on Amstrad 1512s and real software, and not Beebs and kiddy progs.

Sorry, but I get enthusiastic about this since I'm supposed to be in charge of it all and really had to fight for it. Incidentally, what price computer power and info tech in the new national curriculum? One step forward (TVEI) two steps back (national curriculum).

● *Thanks for a most interesting contribution. I'm delighted that we hear from someone, like yourself, who is a real expert in this field. How did you persuade staff at the school that the whole thing was worth while? Would you say that before the scheme started, the staff were more computer aware than my rather pessimistic picture? This is turning into just the sort of debate that Dave was after. How can we make it actually ALTER things?*

From ROY WILLIAMSON

I found the letters on education and computers very interesting. I don't know which school Julian goes to but the ILEA does not support BBC machines, only 380Z, 480Z and Nimbus.

The GCSE syllabuses allow a choice between programming-based courses and applications-based, and to this end the ILEA bundles a lot of quality context-free software with their systems, including MS Word, Multiplan and viewdata, telex and Email simulators as well as CAD/DTP programs.

Any teacher aiming for maximum exam entries would be silly to opt for programming rather than applications courses.

Spreading the use of computers across the curriculum is a different problem. While LEAs and the DES are prepared to spend money on hardware they are not prepared to spend money on training teachers to use it.

This means hiring supply teachers to release teachers from classes and paying trainers. Instead both teachers and trainers are expected to take part in courses in their spare time.

Even the size of the grant can vary very considerably from school to school. Agree 100 per cent about how absolutely essential it is to make time available for inset training of all staff, not just sciences and mathematicians.

Also there is the problem that many computer literate teachers are leaving to get two or three times current pay in a more pleasant environment working full time with computers. Often means no one for Computer Studies even.

From N J THORNE

I'm really too closely involved with the LEA/computer usage scene to enter the discussion without becoming either vitriolic or apoplectic but the "good deal" mentioned by Julian is, in fact woefully inadequate.

If you want to see good cross-curricular, non-computer specific work in schools then see what is going on in the Primary field. This approach is spreading to the Secondary sector as well, albeit slowly.

From MR B DE-LARA

I have a child who is dyslectic. He was at a state school up to the age of eight and we were told that he was an unteachable child. So of he went to a special state school.

These were very disturbed children, and completely the wrong atmosphere, we thought for our child. So we had a private school recom-

mended to us.

We went, and the headmaster who has experience in this field told us it was dyslexia. These state schools do not recognise it; they treat everything as hard of learning.

Well my nipper is quite good on the computer, wp, graphics etc. I have asked a few people on the Cage if they knew of any software which can help me.

Alas every software house I have tried was not able to help. I think that computers could play such a big part in education, I can't see how the people at the top can't see it also.

So now I sit down when I can with my son and try to help all that I can. This is just one isolated case. Just think how many there are that we don't know about.

I did like the free telesoftware that I downloaded a while back. I think it was called Test. It enabled me to write my own questions without the problem of doing the program. I fill up a disc and he sits there for ages. What's more he LEARNS,which is what it is all about.

From MR R P ELLINGWORTH

I must agree that the Amstrads are not fully appreciated in education. My university went to the expense of buying BBC Masters, monitors and Z80 second processors just so they could run CP/M.

If they had bought 464s or 6128s they could have saved themselves a pretty penny on software and hardware. Half the problem must surely be the image the general public have of the Amstrad against that of the BBC.

While it is true to say the Beeb is faster with a better Basic, the Amstrad is cheaper and has far more (and better) software. Trouble is, it has something of a reputation as a games machine, which is not helped by the majority of shops who refuse to stock serious software.

For 99 per cent of the time the higher speed (only marginal anyway) is totally irrelevant. There is an erroneous public perception of the quality of Amstrad machines and the support given. I wonder if part of the problem isn't that LEAs are a bit blinded by "excellence"?

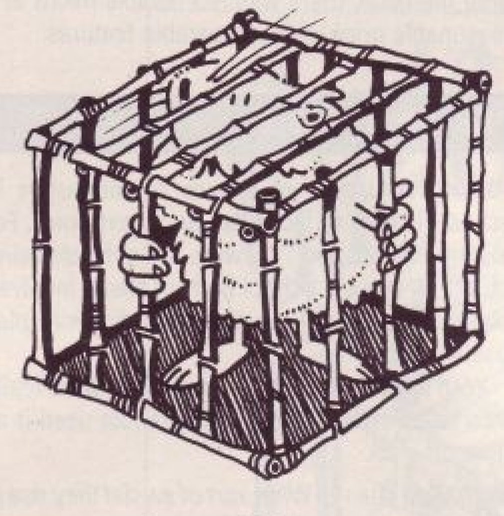
From MR G B GARDEN

Re schools use of computers, when I left school they had 40 Spectrums and TVs six BBC-Bs and twin discs and monitors on which computing was taught and three typewriters attached to monitors and DDs and printers for WP.

Now they have all the Spectrums another 10 Beebs and 35 PC1512s, half of which are hard disc, and 25 PCW8512s for WP. Not a bad selection.

But when I was visiting a school in Glasgow (one of the not so hot areas) four years ago their computer setup consisted of over 50 Beebs with a variety of printers, drives modems and second processors.

This was done with the help of an EEC grant because at the time the area was very deprived . . . not too bad. But the problem is that in both these schools the hardware is used for computing, WP, or office practice when it could



be put to much more efficient use.

At Aberdeen University they have five rooms full of 26 Beebs each and they are mainly used as terminals to their mainframe. But over half the time that they are available to departments is taken up by French and German departments and they are used to carry out all 1st and 2nd year Psychology practicals.

These computers are used from 9 to 5 every day all day nearly and not by the computing, maths stats, engineering departments who have their own facilities. It seems that the software is there, it is only the time inclination and help that people like your wife are lacking in the schools but not in other institutions. The education authorities need a good kick.

From MR D DORN(DE TEECHUR)

I must congratulate Julian for the well thought out letter. His points are well made, and I have taken them on board.

The Pilot projects mentioned by one of your correspondents sound very interesting; more info would be greatly appreciated. Your point, Ian, about the amount of useable hardware available in schools is one that is most important. I fail to see why everything HAS to be Beeb. Surely the cost advantages of CPCs make it easier to put more machines where they can be used best.

Re the point about the quality of "educational" software – as you know, I am preparing a review of three discs worth from Database at present. As yet, I feel it would be unjust to pen an opinion, but, I would love to hear from producers of software what their criteria are for giving a prog.

It is also very encouraging to see a discussion taking place around the subject – let's hope that we can make a dent in established precepts and maybe seed a move towards a more enlightened use of computers (whatever the make) in education, no matter where! My thanks to everyone who has taken the trouble to write.

● *I too hope that we can make such a dent but what would be the best way to approach LEAs? Would it be worth lobbying Mr Baker, or would a more local effort be better?*

From ROY WILLIAMSON

I run staff IT INSET and have gone for heads of major depts and deputy heads. However, as I do it in my own school I'm doing it as a favour; if I do it in another school I can get paid £16 an hour. But because there is no LEA-wide INSET scheme it's impossible to get involved with other schools. And if there was there would not be the money available.

The government supplies the machines, and the schools want the machines because of the kudos it brings, but fail to supply back-up.

Example: The DTI offers schools free modems, but offers no long term financial aid for extra phone lines, phone bills, time charges, subscriptions to remote databases. Result: Modems lie unused in cupboards.

● *I agree completely Roy. I'm afraid that is quite typical of the lip service paid by HMG to state education...*

From MR C A BERRY

I'm not a teacher, so difficult to say, but my view is that simple beginnings in Basic/Logo etc give an idea of the logical process of programming.

I don't think it necessary to go far into any particular language and why shouldn't children be multi-computer-lingual? As soon as possible the applications should be introduced and this might encourage more girls who are not always keen to get into zapping aliens (except my two girls).

The trick I guess for the teacher is to get the kids interested first then proceed to applications. This needs a teacher who is genuinely interested him/herself. If new skills must be learned unpaid it will only be like many other professions do.

● *I found at school that I learned best from those teachers who had a genuine love of their subject. I really do prefer the idea of two computing courses – programming and applications. The latter would be ideal for cross-subject use– Wps in the library for prep work, and so on.*

From DAVID FOSTER

I think the Beeb is a great machine for word processing if there was a decent program for it. It has a great keyboard as long as you wear ear plugs to kill the rattle.

At a rough guess, if you take the number of Beebs sold in total and deduct about 10 per cent, you have probably got the number of Beebs that are in use in education. I agree that applications ought to be taught in school, but I think that there is also a case for teaching programming as well. It all depends on the school though. They cover such a wide range, both in terms of student ability and age range.

I have a suggestion for Mr Howard. How about moving to the Lake District. We need you! The person responsible for computer studies in our local comprehensive school also teaches computing at evening classes. A friend of mine who is on the current course tells me that they were all instructed to bring a blank disc the following week so that they could take copies of the database program that they are using at the moment. Apparently it is all right, as the program isn't copy protected, or so they were informed.

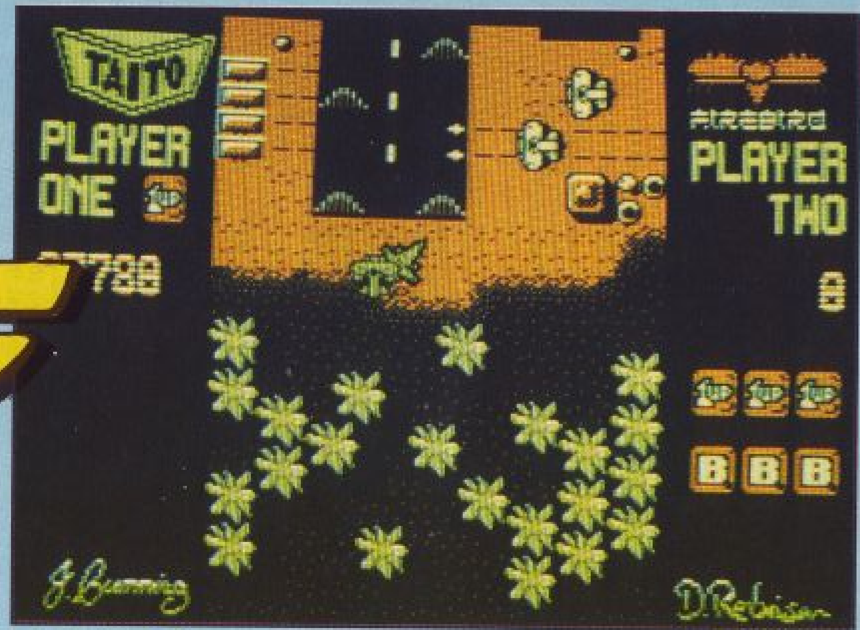
● *Amazing attitude to piracy!*

GALLUP SOFTWARE CHART

Pos	Move	Title / Publisher / Price	Comment	Last month	Market strength
1	Up	**Out Run** *Sega-US Gold* 9.95	Firmly entrenched as a chart hit, this proves that too few people try before they buy. Handling would have enzo fuming. Pretty graphics but otherwise a disgrace for Probe.	6	100
2	Up	**Magnificent 7** *Ocean* 9.95	Actually eight games: Head over Heels, Cobra, Short Circuit, Frankie goes to Hollywood, Arkanoid, Wizball, The Great Escape and Yie Ar Kung Fu.	10	31
3	Up	**Pro Ski Simulator** *Code Masters* 1.99	A poor showing for Code Masters. Surprising that this is their chart-topper. It's not a particularly good game.	4	29
4	Down	**Grand Prix Simulator** *Code Masters* 1.99	Why buy Super Sprint when this is better and cheaper? Why buy this when Jet Bike Simulator is so very much better? Not long for the charts now that Code Masters has many better games.	3	28
5	Up	**Match Day II** *Ocean* 8.95	With the diamond deflection system this sets new standards of realism in football games. Full cup and league tables. Ace playability. Ritman's greatest.	14	27
6	Down	**Solid Gold** *US Gold* 9.99	The fabby conversion of Gauntlet is the star of the show, with a strong supporting cast in the form of Ace of Aces, Leaderboard, Winter Games and Infiltrator.	1	24
7	Up	**BMX Simulator** *Code Masters* 1.99	A totally RAD game for those with a penchant for pedalling. Jump the ramps, race a friend. Go for it. Been around a long time and still a fave.	9	23
8	Down	**Dizzy** *Code Masters* 1.99	Budget Sorcery. Not exactly the Darlings finest hour. Sometimes price doesn't matter. In this case two quid can be better spent elsewhere.	7	22
9	Down	**Live Ammo** *Ocean* 9.95	Army Moves, Rambo, Green Beret, Top Gun, and The Great Escape are strung together in a warlike compilation which would make Schwarzenegger nervous.	5	21
10	Down	**Game Set and Match** *Ocean* 12.95	Compilation with a sporting bent, 10 games give over 20 events including Daley Thompson's decathlon, tennis and shooting. Bound to toughen up the wrist muscles and wear out the joystick.	2	20
11	Up	**Joe Blade** *Players* 1.99	Take the prison by storm. Release the captives and use your quick reflexes and supercharged brain to unscramble letters and set the bomb. Unusual use of Mode 1.	18	19
12	Down	**Combat School** *Ocean* 8.95	A brilliant bit of programming by a large Ocean development team. The gung-ho US army factor grates a bit. Only for serious joystick bashing recruits. Sir!	8	18
13	New entry	**Star Wars** *Domark* 9.95	The game of the game of the film. Top notch conversion of the Atari arcade classic. Pilot an X wing through tie fighters and towers to destroy the deathstar.	NE	17
14	New entry	**Popeye** *Alternative* 1.99	Big sprites and cute story make this Don Priestly game which was originally sold by DK'Tronics an appealing game.	NE	16
15	Up	**Gary Lineker's Superstar Soccer** *Gremlin Graphics* 8.99	A total lemon. Programmed by Americans. It shows. A full 90 min game is a substitute for mogadon. Matchday II is a better buy.	RE	15
16	Up	**Trap Door** *Alternative* 1.99	Berk, Druk, and Boney star in a game which is a firm favourite with the Rawlins family. Great animation but tricky to play. Not just for kids.	RE	14
17	Down	**Soccer Boss** *Alternative* 1.99	You too can be Captain Bob Maxwell; control the whole first division if you like. No options to buy teams from rock stars though. Simple but absorbing.	13	13
18	Up	**Elite Collection** *Elite* 14.95	Bomb Jacks I & II, Frank Bruno's Boxing, Commando, Airwolf, Ghosts and Goblins, Battleships and Paperboy produce a compilation which gives amazing value for money.	19	13
19	Up	**Cricket International** *Alternative* 1.99	Cheating umpires. Drug rows. Distant locations. All features which are missed from an otherwise excellent simulations of the game from Lords.	RE	12
20	Up	**Five Star Games 3** *Beau Jolly* 9.95	Uridium plus, The Way Of The exploding Fist, Trap Door, Tau Ceti, Aliens, Firelord, and Strike Force Harrier make a powerful combination.	RE	12

Key: Non-mover · Up · Down · New entry

FLYING SHARK



Firebird takes to the skies. Simon Rockman's the pilot with his finger on the trigger and joystick in hand



TATIO are famed for launching Space Invaders upon the world, and many a real ale fan has not forgiven them. Of course any forward thinking, right minded computer user will realise that the invaders have long since shuffled sideways off into the mists of time.

Firebird are famed for being part of BT, who will cut off your phone the day you get a new modem just because you haven't paid the bill and then try and cheer you up with Maureen Lipman. Of course any forward thinking, right minded computer user will realise that this is just a ruse to get you to buy one of their computer games.

Graftgold are famous for being very talented programmers who made Andrew Hewson an awful lot of money and then surprised him by going to work for another software house which offered them more money. Of course any forward thinking, right minded computer user will number of colours does make it difficult to see enemy bullets. It's my excuse and I'm sticking to it. If you keep an eye on your foes you won't have any problems.

Your plane, looking for all the world like a Pitts Special or the Legionnaire, takes to the skies. Ignore the Mustang on the inlay card, it is nothing like the plane of the game.

As the safety of the landing strip scrolls off beyond &c0000 enemy planes – which look much like your own – buzz into view. Bandits at eleven thirty (ah – time for a tea break).

Two Gatling-touting bi-planes swoop into the flying foe. A large formation of aircraft yields a bonus tile upon their destruction. This can take the form on a smart bomb, a 1,000 point bonus, or, joy of joys, a 1up symbol which translates into an extra life. These need to be flown over to be collected.

Watch out, it's better to miss a bonus than to risk death.

The fourth kind of bonus is a letter S, which I suppose stands for "Special". It boosts your firepower, first from one to two and then, as a with mosaic red and black bricks. Engraved in these bricks is the letter T, no doubt for Turner – Steve Turner at Graftgold wrote Flying Shark.

Just as you start to think that you have Flying Shark licked it comes up and bites you. The village gives way to more jungle. The tanks here live in gun turret-equipped pillboxes.

Unlike the tanks, these turrets need two blasts to render them harmless. Not an easy task when the pillboxes start spouting tanks.

A wise player will have saved a few bombs for this particular rainy day. Wait until you can see the whites of the tanks and the bomb will have the maximum effect.

Once the pillboxes have been negotiated you

realise that this doesn't matter as long as the games are good and keep flowing.

Combine all three and you get a potent mix. Tatio launched the arcade game, Firebird bought the rights and Graftgold converted it for the Amstrad, their first CPC project.

Chocks away, it's time to climb into your li'l biplane and do some tank bustin'. These days an aviator would be unwise to take on tanks in anything other than a titanium toughened A-10, but these are the heady daze of double U double U two.

The game starts with your plane on the runway in the jungle. Not much of a place but it's home. No time to hanger bout. There is some serious flying to do.

On the side

The arcade game uses a screen which has been turned through 90 degrees. The Amstrad version emulates this by only scrolling the centre third of the screen. The periphery is used to display the players' scores, remaining lives and smart bombs. The bombs and lives appear on Scrabble-like tiles. These and bonus scores appear on the screen and can be picked up to boost your jungle-cred.

The entire display is in Mode 1. The fact that you think there are more than four colours is a tribute to John Cummings' graphic skills. Beautifully drawn huts and jungle foliage. The reduced view. An accurate shot will dispatch the foe in a puff of smoke. If you are slightly less exact the assailant spins to his demise. A great bit of programming; it's a shame that you usually have more important things to do than admire the death of a sprite.

Those more important things usually take the form of a tank or three. Yes I know that the idea of a World War I bi-plane engaging in battle with a tank is a little far fetched, but remember stranger things have happened. Three Gloucester Gladiators (called Faith, Hope and Charity) defended the island of Malta throughout the Second World War.

Ahg! Daydreaming is fatal, in the early stages things are pretty easy. Everything moves in a pre-set pattern, By learning these you get a good deal further in the game. Flying Shark is a test of memory as well as dexterity.

Planes and tanks take it in turns to attack. The tanks move slowly but can aim much more accurately than planes. It is an essential tactic to take the tank turrets out first.

Tanks take two shots to destroy. The first knocks out the gun, leaving the tracked terror to trundle around like a headless chicken.

Then it is a question of stratagem whether you blast the aircraft and go back for the remainder of the tanks or polish off the tanks first. Sometimes you will *have* to destroy whole tanks just to get the guns of those tanks which are cowering behind them.

After knocking out tanks you should give priority to ridding the skies of entire attack waves,of second S is collected, from two to four guns in parallel.

In the arcade game a third S would splay the fire out, giving greater scope for screenwide destruction. I dare say this version does as well. However my playing prowess fell a trifle short of this particular feat.

Fire power

The esses float around the screen and have to be caught. You can come a cropper in this endeavour but the reward is worth a bit of the risk.

The aforementioned smart bombs come in handy for clearing entire attack waves. They have the advantage that they take out any tanks which might gun you down in your attempt to grab an S.

To unleash the smart bomb you hold the fire button in. This often means than you waste large areas of jungle and smart bombs unintentionally, but overall it is a better solution than putting the computer on the floor and triggering the weapon with a toe.

Having mastered the whys and wherefores of battle, it is time for a little scouting ahead. The first battle takes place starting from the previously mentioned airfield with the aircraft coming from the left and right.

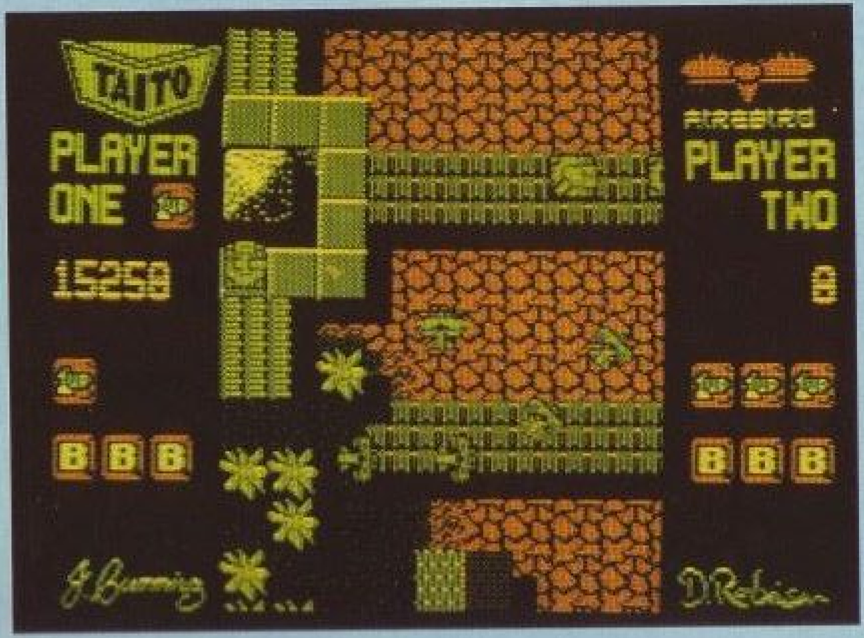
The jungle gives way to a village of thatched huts. They are populated by tanks. Pretty bamboo bridges join the huts. The ground is tiled come across a large tiled building, the light bouncing off the roof in a way you'd have thought impossible in a four colour mode. This houses the most fearsome tank to have made computerfame. It takes a hell of a lot of flak. Smart bombs will weaken the big tank but you'll have to top it up with some flying lead.

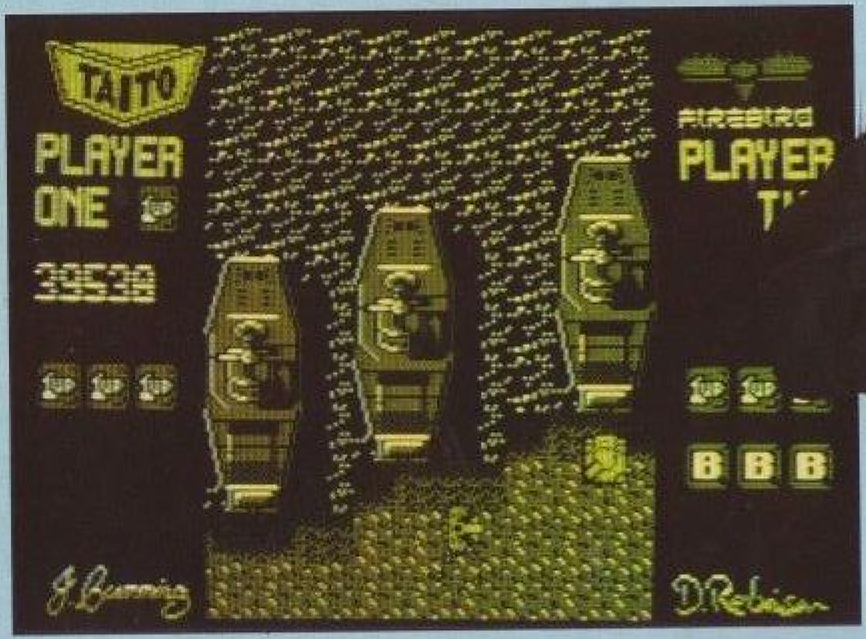
There is a little more jungle activity to deal with, a few tanks, and then the airstrip reappears. You score a bonus for finishing the level, and for each of the remaining smart bombs.

The colour palette changes from red to green and it is off to do battle again. You'll find a host of nasty surprises – landing craft which disgorge two tanks each, planes which fire from the rear and take several attempts to down, big multi gunned battleships and tank-like motor launches.

A big aircraft carrier brings to bear more firepower than you can hope to survive. Beyond that there are two more levels, tough stuff, and then it's back to the original airstrip for more of the same.

The defeated enemy fight harder the second time around. Only the skilled will survive. It's up to you to win through.









Jeff Walker is the man to teach your Arnold how to walk and chew gum – at the same time...

THE second quickest way to get to the bar in a pub packed with novice CPC programmers is to shout, "Basic Interrupts!" Within seconds the place will clear of all but the most brave or most inebriated souls.

Well, drink up my little perspicuous rem statements, 'cause here it comes...

"Basic Interrupts!"

Hello? Hello?? Hey, come back here you lily-livered lot. Dear oh dear, anyone would think I'd offered to pull all your teeth out instead of educate you in the art of interruption. Don't be silly. Of course you wouldn't rather have all your teeth out.

Interrupts are without doubt the most innovative features of Basic on the CPC. Armed with AFTER, EVERY, and a few other associated keywords, CPC 464, 664 and 6128 owners can make their machines do things easily in Basic that owners of even the most modern home micros would have trouble doing in advanced machine code.

The principles of interrupting Basic are exactly the same for both AFTER and EVERY, so let's learn about Timer Numbers first by taking a look at the AFTER keyword.

```
   AFTER so.long,timer.no GOSUB xxxx
          /          \           \
         /            \           \
measured in            \      subroutine
50ths of a              \        line.no
second               0,1,2 or 3
```

When Arnold comes across one of these benign beasts he starts a countdown running – we'll call it by its proper name, a Timer. You can have up to four Timers running at any one time, and the higher the Timer Number, the more important the interrupt is in the pecking order.

To see how this works, try the following:

```
10 ' 100/50ths     Timer number
20 ' of a sec       /
30 '     \        /       Interrupt S/R
40 '       \     /          /
100 AFTER 100,0 GOSUB 160
110 AFTER 100,1 GOSUB 180
120 AFTER 100,2 GOSUB 200
130 AFTER 100,3 GOSUB 220
140 GOTO 140
150 '
160 PRINT"Timer 0":RETURN
170 '
180 PRINT"Timer 1":RETURN
190 '
200 PRINT"Timer 2":RETURN
210 '
220 PRINT"Timer 3":RETURN
```

It is obvious that the four Timers are going to have a bit of a barney about who's going to do what after the program has been running for two seconds (100/50ths) because they have all been set to "go off" after the same length of time. Chaos will reign unless we have some predetermined rules as to who does what first. This is where the Timer Numbers come in.

It is important to understand that Timer Numbers only come into play when there is a danger of two or more interrupts wanting to execute at the same time. You can think of them as a sort of tie-breaker. In the example above, the output to the screen is:

Timer 3
Timer 2
Timer 1
Timer 0

When entering any subroutine under control of an interrupt Timer, any Timers of a lower number will be temporarily disabled whilst the higher priority subroutine executes. Remember, the highest priority is 3, the lowest is 0.

Now press ESC twice to break out of line 140 and edit line 100 to read:

100 AFTER 99,0 GOSUB 160

That 1/50th of a second makes all the difference. Now that Timer 0 doesn't clash, it can safely execute before the higher priority Timers' countdowns run out. Run the program now and you'll get:

Timer 0
Timer 3
Timer 2
Timer 1

See?

You will have noticed already that after the interrupt subroutines have executed, Arnold just sits at line 140 twiddling his thumbs. From this you will have correctly surmised that each interrupt has only happened once. This is the only difference between the two interrupt keywords: AFTER only does it once, but EVERY keeps on doing it until you tell it to stop.

AFTER is of limited use really. I suppose you could use it for setting a time limit on a game:

10 AFTER 30000 GOSUB 9999

The above would give you 10 minutes to succeed in doing whatever you had to do. Note that the length of time must be supplied as a

Basic tutor

positive integer or integer-variable. This means the largest number you can supply is 32767, which is a little under 11 minutes. Some books on CPC programming tell you the upper limit is 255. Ignore them, it's all lies.

The smallest number you can use is 1. Watch out for typing errors, though, because AFTER 0 GOSUB <line.no> and EVERY 0 GOSUB <line.no> will be accepted by the Basic interpreter and cause nothing to happen every zero seconds. In other words, the interrupts won't work.

Also remember that if you are only using one interrupt, the Timer Number does not need to be specified; it will default to 0.

Now, before you go any further, change the timings of the AFTER example program. Play about with it. Once you feel you understand the basics of how Timers operate, you're safe to pass on to matters more advanced.

We've already seen that higher priority Timers can interrupt lower priority ones, but not vice-versa. This is where things can get confusing because a low priority interrupt may not execute at exactly the right time; it will wait until its big brothers have had their say first – unless we can knock the big brothers out for a while. And we can.

DI and EI are the tools we need to disable and re-enable interrupts. By putting DI at the beginning of a low priority interrupt subroutine we can protect it from being walked over by all other Basic interrupts.

To re-enable it we actually need do nothing because the act of RETURNing from a subroutine under control of an interrupt does it for us. EI is there for the times you want to re-enable interrupts before the end of the subroutine.

Note that DI doesn't totally disable all interrupts foreverandeveramen – it just disables them until an EI or RETURN is executed. The Timers are still running, and the program will remember how many interrupts have been missed. When they are re-enabled, they will take back what is "owed" to them before releasing control to the main program again. This usually causes things to speed up suddenly.

Pressing ESC (once or twice) doesn't halt the Timers either – it does exactly the same thing as DI. You can see this for yourselves later by breaking out of the Clock program, waiting 30 seconds or so, and then typing CONT.

We'll see how to stop interrupts from interrupting later. Just now though, let's look at a simple example of how DI should be used. (The indentations in lines 1010 and 1020 are there to make the example more readable):

```
100 EVERY 100,0 GOSUB 1000
110 EVERY 10,1 GOSUB 2000
120 GOTO 120
999 '
1000 DI: PRINT"*** Timer 0 ***"
1010      FOR delay=1 to 1000:NEXT
1020      RETURN
1999 '
2000 PRINT"Timer 1":RETURN
```

Run the above program and you should get ten "Timer 1" messages, one " Timer 0" message, and then a pause followed by the sequence repeated ad-infinitum. The important bit is the pause caused by line 1010.

Now break into the program, remove the DI from line 1000 so that it reads:

1000 PRINT" Timer 0 "

and run the program again. This time there's no pause, leading you to believe that the delay loop in line 1010 isn't executing. In fact it is, but it is being interrupted every fifth of a second by Timer 1 because it has a higher priority.

So where does EI come into it? Well, suppose the low priority subroutine being controlled by Timer 0 had some graphics commands in it – to draw a few boxes on the screen perhaps – and the last thing you want is a half-drawn box on the screen while the program does something else for a tick. In a case like this you would surround the important graphics commands that you don't want interrupted with DI and EI:

```
999 '
1000 do this
1010 do that
1020 DI
1030     draw
1040     some
1050     boxes
1060 EI
1070 do this
1080 do that
1090 RETURN
```

Above, "do this" and "do that" can be interrupted by higher priority Timers, but "draw some boxes" cannot. Get the picture?

To disable an interrupt completely we need to use the REMAIN keyword. Its function is to "steal" all the 50ths of a second the Timer has left, leaving it, as it were, with no fingers to count on.

If you've not played with interrupts before, then you may be under the impression that the only thing you can do with REMAIN is PRINT it. Those CPC handbooks have a lot to answer for!

In the real world you would use REMAIN to halt a Timer thus:

```
         halt = REMAIN(x)
          /          \
         /            \
   a dummy          the Timer you
   variable         want to halt
```

A dummy variable is a variable whose value you're not particularly interested in either before or after an operation – it's just there to enable you to carry out that operation. The x in brackets after REMAIN is the important bit, and should be the number of the Timer you want to halt. This applies to Timers being run by both AFTER and EVERY.

Before we halt a Timer, though, we have to set one running, so let's move on to EVERY in more detail now, and see how to stop and start it.

```
100 ' REAL-TIME CLOCK
110 '
120 MODE 1
130 LOCATE 1,1:PRINT "00:00:00"
140 hour=0:mins=0:secs=0
150 EVERY 50,3 GOSUB 1000
160 GOTO 160
170 END
180 '
999 ' Clock Interrupt S/R
1000 secs=secs+1
1010 IF secs=60 THEN mins=mins+1:secs=
     0
1020 IF mins=60 THEN hour=hour+1:mins=
     0
1030 IF hour=24 THEN hour=0
1040 LOCATE 1,1:IF hour<10 THEN PRINT
     HEX$(hour,2) ELSE WRITE ur
1050 LOCATE 4,1:IF mins<10 THEN PRINT
     HEX$(mins,2) ELSE WRITE ns
1060 LOCATE 7,1:IF secs<10 THEN PRINT
     HEX$(secs,2) ELSE WRITE cs
1070 RETURN
```

OK, a real-time 24 hour clock is probably the most obvious example I could have chosen, but it is also self-documenting because telling the time is a concept we all find second nature once we are out of short trousers.

The only things that might confuse you in the above listing are the HEX$ and WRITE bits. HEX$ is a sneaky way of getting the program to print a zero before single-digit numbers, and WRITE puts numbers on the screen without a leading space. (a leading space would erase the colons between the numbers).

The starting time can be altered by changing the values of hour, mins and secs in line 140. In the example it is set for midnight.

Once the program has passed the EVERY command in line 150, it just sits at line 160 doing nothing – it's the interrupt that is doing all the work. In practise, this – line 160 – is where the main part of your program would start.

Right. Let's halt the Timer now by putting a REMAIN somewhere. Insert a new line in the Clock subroutine:

1065 PRINT REMAIN(3)

Okay, okay. I know I said you should use a dummy variable with REMAIN, and so you should. This is just to show you how long the interrupt subroutine took.

Run the program again, and your screen should end up like this:

00:00:01 48

The 48 is the number of 50ths of a second that

were left in Timer 0's countdown before we halted it. In other words, the interrupt subroutine took no more than 2/50ths of a second to execute.

This is a useful thing to know if we want to run more than one interrupt. It means that we have 48/50ths of a second to do some other thing (or things) before the next tick of our clock. You can DELETE line 1065 now.

So let's do another interrupt – a jolly little tune (I don't think). Add these lines to the Clock listing:

```
152 EVERY 5,2 GOSUB 2000
1998 '
1999 ' Tune Interrupt S/R
2000 ON SQ(1) GOSUB 2020:RETURN
2010 '
2020 IF tone=0 THEN RESTORE 2040
2030 READ tone:SOUND 1,tone:RETURN
2040 DATA 60,60,53,47,60,47,53,80
2050 DATA 60,60,53,47,60,60,63,63
2060 DATA 60,60,53,47,45,47,53,60
2070 DATA 63,80,71,63,60,60,60,0
```

The tune interrupt is called every 10th of a second (5/50ths) in order to keep the sound queue nice and full. You'll notice that as fast as the tune is playing, the operation of the clock is not affected in any way.

Now, let's throw in another interrupt. How about one to check a couple of keys so we can toggle the clock and music on and off? Yes? Fine. Add these lines:

```
154 EVERY 50,1 GOSUB 3000
2998 '
2999 ' Keypress Interrupt S/R
3000 WHILE INKEY$="":WEND
3010 IF INKEY(16)>-1 THEN GOSUB 3050
3020 IF INKEY(79)>-1 THEN GOSUB 3100
3030 RETURN
3040 '
3049 'CLR to toggle clock on/off
3050 haltclock=(NOT haltclock)
3060 IF haltclock=0 THEN EVERY 50,3 GO
     SUB 1000
3070 IF haltclock=-1 THEN halt=REMAIN(
     3)
3080 RETURN
3090 '
3099 'DEL to toggle music on/off
3100 haltmusic=(NOT haltmusic)
3110 IF haltmusic=0 THEN EVERY 5,2 GOS
     UB 2000
3120 IF haltmusic=-1 THEN halt=REMAIN(
     2)
3130 RETURN
```

This last interrupt brings me on to an important feature of Basic Interrupts, the fact that INPUT or LINE INPUT will temporarily disable all interrupts while it waits for the user to input something. It acts just like DI does.

INKEY and INKEY$, on the other hand, can both be interrupted by all the Timers. Therefore, if you are using interrupts in your program, and it is important that they continue running smoothly at all times, ALWAYS use INKEY or INKEY$ to get user input.



The little subroutines at 3050 and 3100 give practical examples of how to switch Timers on and off. The two lines:

3050 haltclock=(NOT haltclock)
3100 haltmusic=(NOT haltmusic)

toggle a variable between 0 and –1. If haltclock equals 0, then (NOT haltclock) will equal –1. If haltclock equals –1, then (NOT haltclock) will equal zero. It's called Boolean Logic. Don't ask me to explain it here, it'll only confuse matters. Another time, perhaps.

So, now we have three interrupts running, and we have the basics of some of the features that professional programmers use to polish their games. We have continuous music whilst the game's going on (the game in this case is represented by: 160 GOTO 160). We have a real-time clock. We have a pause button (by stopping the clock), and we can switch the music off if it starts to grate.

Now I want you to be really brave and stick another interrupt in on Timer 0 yourselves. Don't be too ambitious – try something simple first like changing the border colour every few seconds.

And when you've done that, see if you can replace "160 GOTO 160" with something more useful. Again, small is best at first. Don't forget you can move the clock if you like, it's just a case of reLOCATEing it.

And so we part for another month. Hmmm? What's that you say? You want to know the QUICKEST way to get to the bar in a pub packed with novice CPC programmers? Simple. Just hide under a very strong, heavy table and whisper, "CP/M". Tarra. (hic).

```
100 ' THE FULL LISTING
110 ' ----------------
120 MODE 1
130 LOCATE 1,1:PRINT "00:00:00"
140 hour=0:mins=0:secs=0
150 EVERY 50,3 GOSUB 1000
152 EVERY 5,2 GOSUB 2000
154 EVERY 50,1 GOSUB 3000
160 GOTO 160
170 END
180 '
999 ' Clock Interrupt S/R
1000 secs=secs+1
1010 IF secs=60 THEN mins=mins+1:secs=
     0
1020 IF mins=60 THEN hour=hour+1:mins=
     0
1030 IF hour=24 THEN hour=0
1040 LOCATE 1,1:IF hour<10 THEN PRINT
     HEX$(hour,2) ELSE WRITE ur
1050 LOCATE 4,1:IF mins<10 THEN PRINT
     HEX$(mins,2) ELSE WRITE ns
1060 LOCATE 7,1:IF secs<10 THEN PRINT
     HEX$(secs,2) ELSE WRITE cs
1070 RETURN
1998 '
1999 ' Tune Interrupt S/R
2000 ON SQ(1) GOSUB 2020:RETURN
2010 '
2020 IF tone=0 THEN RESTORE 2040
2030 READ tone:SOUND 1,tone:RETURN
2040 DATA 60,60,53,47,60,47,53,80
2050 DATA 60,60,53,47,60,60,63,63
2060 DATA 60,60,53,47,45,47,53,60
2070 DATA 63,80,71,63,60,60,60,0
2998 '
2999 ' Keypress Interrupt S/R
3000 WHILE INKEY$="":WEND
3010 IF INKEY(16)>-1 THEN GOSUB 3050
3020 IF INKEY(79)>-1 THEN GOSUB 3100
3030 RETURN
3040 '
3049 'CLR to toggle clock on/off
3050 haltclock=(NOT haltclock)
3060 IF haltclock=0 THEN EVERY 50,3 GO
     SUB 1000
3070 IF haltclock=-1 THEN halt=REMAIN(
     3)
3080 RETURN
3090 '
3099 'DEL to toggle music on/off
3100 haltmusic=(NOT haltmusic)
3110 IF haltmusic=0 THEN EVERY 5,2 GOS
     UB 2000
3120 IF haltmusic=-1 THEN halt=REMAIN(
     2)
3130 RETURN
```

MicroLink in association with TELECOM GOLD

NEWS...NE

Service has new specialist role

ONE of the country's leading learned societies has joined MicroLink.

The British Psychological Society has nearly 12,000 members and is involved with government, the health and education services, academic institutions and other organisations here and abroad.

Last year its charter was changed to allow it to maintain a register of chartered psychologists which the general public will soon be able to consult.

This gives the country a new breed of chartered specialists whose education and professional conduct the BPS oversees.

The society is no stranger to the benefits of electronic mail. For some time its members who work in academic institutions have been communicating via JANET, the Joint Academic Network.

By joining a more widely-used service like MicroLink, BPS members working in all areas of psychology can now communicate faster and more efficiently with the Society's offices in Leicester.

In addition the society's extensive business activities, which include publications and software, will be enhanced by MicroLink Email and telex facilities.

A bulletin board for business

MICROLINK has joined forces with the University College of Swansea to provide a unique electronic bulletin board for businesses.

Subscribers can get advice free of charge from experts in various fields, and discuss business problems with others who may have experienced similar difficulties.

As well as being instant and free, this access to professional expertise comes with no strings attached, no axe to grind and no commercial bias.

The wide range of business sectors covered includes legal matters, exporting, industrial relations, management, market research, personnel and training, statistical and systems analysis.

Expertise is also supplied in the areas of computing and computer systems, electrical and electronic engineering, expert systems and artificial intelligence; and mechanical engineering.

Users of the Business Bulletin Board can browse through the messages and replies for items of interest.

All messages are read by the system operators who pass them on to the relevant expert.

Translation back the same day

LANGUAGE expert and Swansea university lecturer Dr June Salmons has started what is probably the world's fastest translation service on MicroLink.

Subscribers who send foreign language documents to her mailbox can get the translated material back the same day – a vast improvement over the post, particularly for businesses.

"Initially I can offer translation facilities in Italian, Spanish and French – but if the demand is there, other European languages can easily be added", said Dr Salmons.

Subscribers can use either the standard service, where the translated document is returned via MicroLink the next day, or the super-fast same day service.

Dr Salmons, a lecturer in Italian, said: "Europe has always been an important area for organisations to develop into. However, barriers are often erected solely because of linguistic difficulties.

"Hopefully, a fast and efficient service like this should make it easier for more firms to enter Europe".

Big cash savings

THE first commercial bulletin board on MicroLink has been launched.

Called LoadLink, it will help Britain's 2,000 removals firms avoid expensive wasted space on their vehicles.

The service provides information about spare capacity – part-loads – available throughout Britain and abroad.

Firms using LoadLink can sell or buy space on part-loaded vehicles, enabling journeys to become more efficient and profitable.

It also enables firms to give their customers better service by accepting small loads that were previously uneconomic.

Take to the skies with Firebird

WIN a remote controlled aeroplane



FLYING Shark gives you the chance to shoot tanks, planes and ships from the air, but for realism there is not much which can beat taking a radio controlled aeroplane out for a test flight. Firebird will give the lucky winner of this competition a two channel Ripmax stick plane.

This electric plane is easy to build, coming nearly ready to fly with batteries, charger and motor. Firebird will also give the lucky winner a radio control transmitter, receiver and the special miniature servos the plane needs. The easy construction and high wing design make this an ideal beginners plane. It is easy to fly and will provide the careful pilot with hours of fun.

Twenty runners-up will be sent the cleverest calculator yet. It looks just like a book of matches but opens up to reveal a numeric keypad and calculator display. It's neat and can be carried around in a shirt pocket, or leave it on the desk at school to fool the teacher. The Firebird logo emblazoned on the front and Rainbird on the back lets everyone know that you are a software connoisseur.



The runners-up prize

All you have to do is answer three simple questions correctly, send us the form and wait.

(1) How many aircraft are parked next to the landing strip at the start of Flying Shark?

(a) 3 (b) 5 (c) 7

(2) Which Firebird game was written by Ian Bell and David Braben?

(a) Cholo (b) Sentinel (c) Elite

(3) You score a bonus life in Flying Shark after

(a) 25,000 points (b) 50,000 points
(c) 75,000 points

RULES:

1. The winner will be the first correct entry opened on April 29.
2. You may photocopy the form but only one entry is allowed per reader.
3. Anyone found entering more than once will have ALL entries disqualified.
4. Employees of Amstrad Computer User and associated companies may not enter. Even if they are the editor and want to win this more than any prize ACU has ever offered before.
5. The editor's decision is final. Except where this clashes with rule 4.

ENTRY FORM

1 ________ 2 ________ 3 ________

Name ________

Address ________

____

____

Phone No. ________

Send to:

**Firebird Flying Shark/Amstrad User Competition
169 Kings Road, Brentwood, Essex CM14 4EF**

THE ONLINE CONFLICT...



OR IS IT?

Rupert Goodwins looks at a new communications rom for CPC users

IT'S nice to see that the computer communications side of CPC ownership is alive and kicking. Despite being a relatively expensive aspect of micro ownership, it has a certain addictive quality which inspires people to show a degree of commitment that can be quite as startling as the phone bill.

The communications program looked at here is the end result of such committment by users, who saw a need and worked hard to meet it.

On Prestel, BT's viewdata service, is an area for Amstrad owners. Called Amsters' Cage, it is a lively area where users' queries are answered (often by Amstrad bods themselves), products reviewed and anything Amstrad catered for.

The best of the letters are printed in *ACU* every month, so you can see the sort of thing that goes on. The Cage rom was developed by the person who runs the area, together with someone who has been active in Spectrum comms for a few years, in response to users who didn't think the available software up to much.

This rom is designed to work with any modem and most available interfaces, but it provides most facilities for the Prestel user. All in all it is unsuitable for traditional comms like Telecom Gold (MicroLink) and micro/mainframe links. This is a problem which the producers suggest you overcome by using one of the public domain terminal programs.

The Cage rom plugs in as roms do, and can take the place of most other comms roms, including the one supplied in the Amstrad RS232 interface.

There is a spot of trouble possible with early Honeysoft roms, and some points to watch for with the latest Amstrad/Pace serial interface.

Installation

All these are covered at length in the manual, and anyone at all familiar with rom software will have little difficulty in installation. The faint of heart can avail themselves of the five quid rom fitting service the Cage people offer.

Once it's running, an optional set up procedure allows you to maintain a directory of common telephone numbers, tell the software about your modem, and set things like communication speed. The software defaults (chooses what to do if you don't tell it) to the most commonly used settings, so the chances are that you can switch on and go.

Everything in the Cage software revolves around the carousel concept. This and many of the other ideas used are common in "professional" viewdata systems. A carousel is a set of pages linked end-to-end.

The Cage rom can copy any Prestel page to its own internal carousel, which means that telephone bills – argh – can be kept to the minimum.

You can pop on to Prestel, grab the frames of information you want as fast as the central computer can send them (not very), and read them at leisure off-line.

In practice I (a true comms addict) rarely use this feature, as I like to browse. In practice I get humongous phone bills and have to write for *ACU* to pay them off. Beware my fate.

A feature I do use, and that frequently, is the page tagging facility. Prestel runs on big computers, and as a result can only remember the last three frames you looked at. Unadorned, Prestel can therefore only allow you to step back three frames before you get stuck.

Page tagging lets your micro remember page numbers, and so lets you have instant recall of up to 27 pages (pressing TAB followed by shift and a letter key remembers a page number, subsequentially pressing TAB-letter gets you back to that page).

When you're exploring the depths of a viewdata system, this can be an invaluable way

to remember useful index pages before you lose yourself in the banyan-like tree structure.

An underused feature of the Prestel system is the ability of non-editors (like you, me and the rest of the users) to send colour and graphics in mailbox frames.

To turn these features on, the Prestel system has to get a special sequence of characters, usually ESCape and one other.

The one other isn't very obvious, and unless you use the facility daily you're liable to forget the magic.

Red letter days

Cage – again like professional systems – has sensible keys defined to send the codes for Red Text or Blue Background. The function keys (the ones on the numeric keypad) send text colours if pressed by themselves, background colours if shifted and graphics colours if CTRL'd.

Hopefully this will encourage more people to experiment with interesting mailbox designs; this sort of thing makes Prestel seem less formal and thus more attractive to non-computer buffs.

There are many more facilities, a lot of which seemed designed to appeal to the viewdata information provider – a posh name for people who put stuff up for other people to read.

Ian Hoare is one such, and there are a lot of hobbyist IPs who keep large sections of Micronet up to date for the love of it. It follows that these people are among the most active and vocal Prestel users, and thus have an disproportionally large say in the design of new software.

For example, the windowing ability, where part or all of a frame can be modified, seems heaven sent for people who write articles on word processors and have to stick them into a Prestel page that has a few lines of unchanging information.

Define the window as the bits between the pretty picture at the top and the routing information ("Press 1 for next item..") at the bottom and you can automatically fill in the area with your text.

Great for IPs, but by and large useless for people who just use Prestel as readers.

No omissions

Having said that, I can't think of any useful features that have been left out to make room for the IPs' benefit. Just be aware of the extra levels of complexity there; they don't make things any more difficult and you don't have to use them. And who knows, you might become an IP one day...

As the manual says, security is a thorny problem. Your access to Prestel needs two things, your account number and your password. The first is set immutably by Prestel, but the second can (and should) be set by you.

Now, it's obviously very tempting to set up the computer to send both the security numbers automatically when you dial the Prestel computer, but consider what would happen if someone else got hold of the disc you'd saved those numbers on.

But having to remember them is difficult. The answer Cage uses is to allow you to save them on disc for automatic sending, but encoded, so you have to supply a password before you can start.

You still have to keep one secret, but only one, and it's a safe bet that even the avidest hacker couldn't discover the password if your disc got "lost".

I didn't try to crack the encryption scheme, but considering the thoroughness that the rest of the rom exhibits, I would be very surprised if it were easily possible.

The Cage rom supports all current telesoftware standards. Telesoftware is a big point of Micronet's sell, and is an adaption of the Prestel standard to allow software to be distributed via Prestel.

For various technical reasons explained in the manual there are difficulties in using tape to save downloaded software, but as research shows (sorry about the adspeak) people buy modems after printers and disc drives, so this probably won't matter to too many.

For those who are afflicted, a telesoftware program will be available soon to solve the problem. Or so the manual says, but one of the advantages of having a software package written by the man who runs the Prestel area is that telesoftware support will probably be easy to come by.

There are several rivals in this rather crowded field. Amstrad has two serial interfaces, a CPC coloured box with two edge connectors which is no longer made.

This contains Amstrad's own software which attempts to be all things to all men and fails. It is worth trying to pick one up second had (value not much more than £15), so that you can whip out the Amstrad chip and stuff a Cage rom in.

The newer Amstrad serial interface is badged from, and also sold by, Pace. This contains the Honeysoft terminal. The interface is good and stable, and the software has the advantage of working with scrolling systems. Until the arrival of the Cage rom it was the best buy for Amstrad comms enthusiasts. You might still be better off with the Honeysoft combo, and then upgrading the Prestel side by adding a Cage rom.

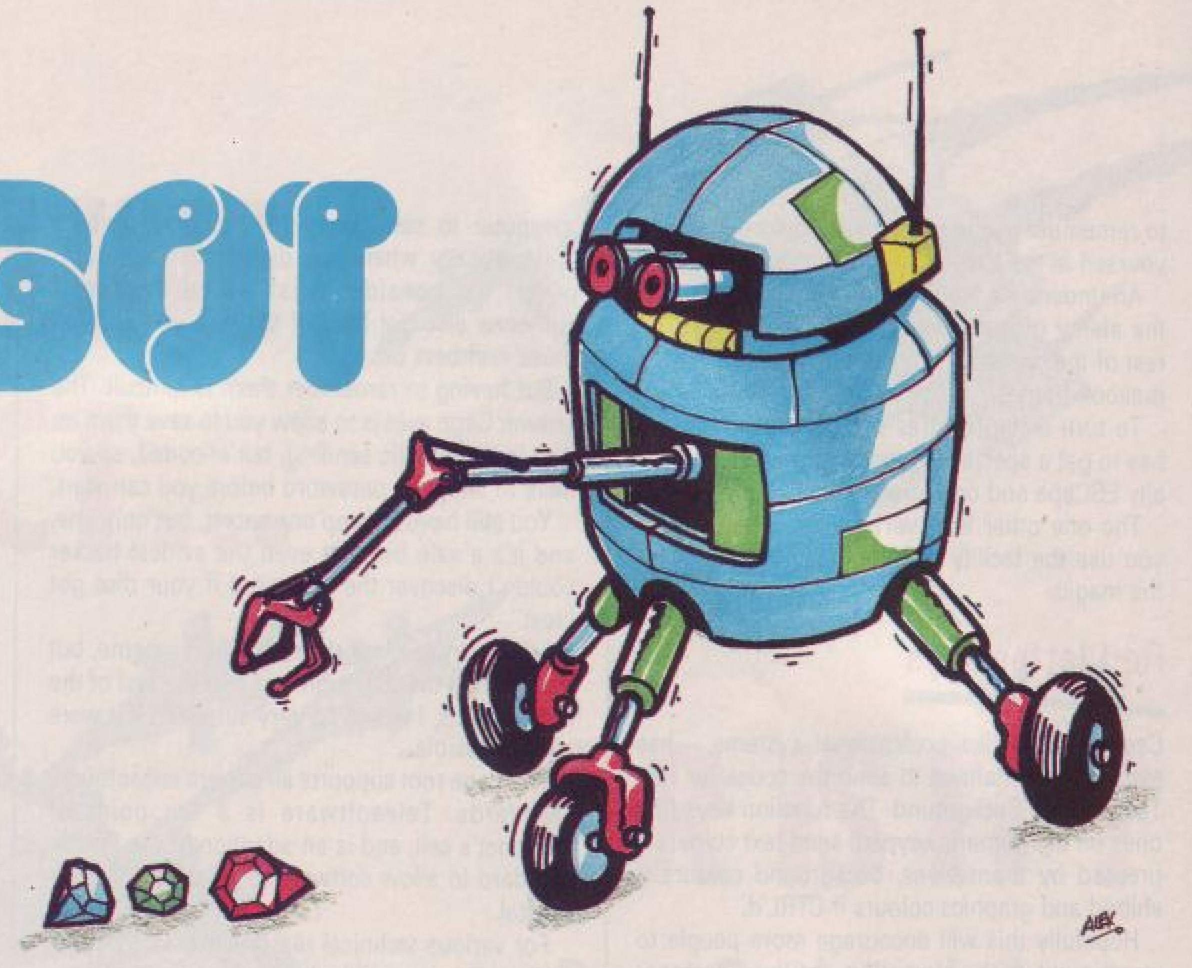
Conclusion

Remember that if you buy a Cage rom you will have to sort out a rom board and serial interface. You can buy the complete caboodle in the form of the Spectre comms pack from Micronet. This costs £69.95.

If you have a rom board and serial interface you can buy the rom on its own for £34.50 from Ian Hoare (01-965 8957), Arnor (0733 239011) or Micronet (01 278 3147). You will need to specify which interface you have, different versions of the Cage rom are compatible with the Amstrad and KDS interfaces. For more details, or to order a rom write to Ian Hoare, 46 Connaught Road, London NW10 9AG.



ISOBOT



A game in Basic and Machine Code by Mrs L. McGarry

FIND the 10 hidden crystals, then take them one by one to the box by the exit to escape. But beware of the killer droids lurking in the 65 screens of Isobot.

This is our first 3D listing, a game in the mould of knightlore – although the graphics are not quite that good. The maze changes from game to game.

Please note that the | character is used to generate an RSX.

This is on the @ key next to the letter P. This is one of the best games we have had in *Amstrad Computer User*. Take care typing it in and you should have fun with it.

```
10 REM ---   Isobot   ---
20 REM ---by L.McGarry---
30 DEFINT a-y
40 GOSUB 1000
50 GOTO 2210
60 FOR l=1 TO lives:|SPRITE,2+l*2,22,l
   ive:NEXT l
70 GOSUB 1950
80 WHILE lives>0
90 GOSUB 180
100 IF crys=10 THEN 2070
110 IF ro=19 OR ro=30 OR ro=50 OR ro=6
    4 THEN 140
120 GOSUB 580
130 GOSUB 790
140 WEND
150 PEN 1:PRINT CHR$(22)+CHR$(1):LOCAT
    E 7,9:PRINT"GAMEOVER":PRINT CHR$(2
    2)+CHR$(0)
160 FOR a=0 TO 2000:NEXT
170 GOTO 2210
180 IF INKEY(0)>=0 AND INKEY(8)>=0 THE
    N RETURN
190 IF INKEY(0)>=0 AND INKEY(1)>=0 THE
    N RETURN
200 IF INKEY(2)>=0 AND INKEY(1)>=0 THE
    N RETURN
210 IF INKEY(2)>=0 AND INKEY(8)>=0 THE
    N RETURN
220 IF INKEY(0)>=0 THEN x=x-2:y=y-1:ma
    py=mapy+1:droid=man4:GOSUB 270
230 IF INKEY(2)>=0 THEN x=x+2:y=y+1:ma
    py=mapy-1:droid=man2:GOSUB 270
240 IF INKEY(8)>=0 THEN x=x-2:y=y+1:ma
    px=mapx-1:droid=man1:GOSUB 270
250 IF INKEY(1)>=0 THEN x=x+2:y=y-1:ma
    px=mapx+1:droid=man3:GOSUB 270
260 RETURN
270 IF mapx>8 AND mapy=4 AND exit(ro,1
    )=1 THEN ro=ro+1:x=14:y=16:mapx=1:
    GOSUB 1950:RETURN
280 IF mapx>8 AND mapy=5 AND exit(ro,1
    )=1 THEN ro=ro+1:x=12:y=15:mapx=1:
    GOSUB 1950:RETURN
```

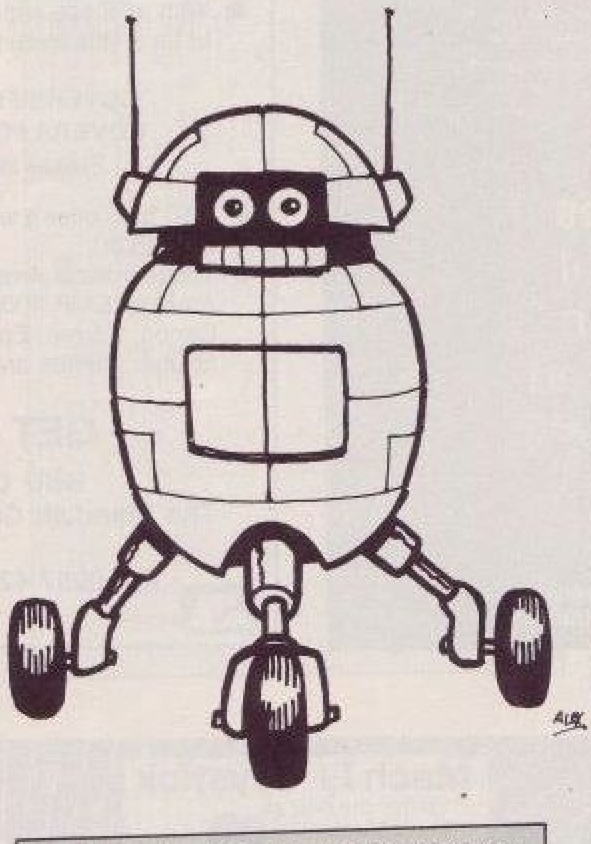
```
290 IF mapx<1 AND mapy=4 AND exit(ro,3
    )=1 THEN ro=ro-1:x=28:y=9:mapx=8:G
    OSUB 1950:RETURN
300 IF mapx<1 AND mapy=5 AND exit(ro,3
    )=1 THEN ro=ro-1:x=26:y=8:mapx=8:G
    OSUB 1950:RETURN
310 IF mapy<1 AND mapx=5 AND exit(ro,2
    )=1 THEN ro=ro+8:x=14:y=8:mapy=8:G
    OSUB 1950:RETURN
320 IF mapy<1 AND mapx=4 AND exit(ro,2
    )=1 THEN ro=ro+8:x=12:y=9:mapy=8:G
    OSUB 1950:RETURN
330 IF mapy>8 AND mapx=4 AND exit(ro,4
    )=1 THEN ro=ro-8:x=26:y=16:mapy=1:
    GOSUB 1950:RETURN
340 IF mapy>8 AND mapx=5 AND exit(ro,4
    )=1 THEN ro=ro-8:x=28:y=15:mapy=1:
    GOSUB 1950:RETURN
350 IF mapx=4 AND mapy=4 AND ro=19 THE
    N x=22:y=14:mapx=4:mapy=3:ro=50:GO
    SUB 1950
360 IF mapx=4 AND mapy=4 AND ro=30 THE
    N x=22:y=14:mapx=4:mapy=3:ro=64:GO
    SUB 1950
```

```
370 IF mapx=4 AND mapy=4 AND ro=50 THE
    N x=22:y=14:mapx=4:mapy=3:ro=30:GO
    SUB 1950
380 IF mapx=4 AND mapy=4 AND ro=64 THE
    N x=22:y=14:mapx=4:mapy=3:ro=19:GO
    SUB 1950
390 IF ((mapx=mapg AND mapy=maph) OR (
    mapx=maps AND mapy=mapt)) THEN |SP
    RITE,2+lives*2,22,blank:lives=live
    s-1:x=12:y=9:mapx=4:mapy=8:IF live
    s=0 THEN RETURN ELSE GOSUB 1950
400 IF mapx=4 AND mapy=4 AND cry(ro)=1
     AND carry=0 THEN carry=1:cry(ro)=
    0:SOUND 1,200,20,7,7,7
410 IF ro=64 AND carry=1 AND mapx=4 AN
    D mapy>6 THEN carry=0:mapy=6:x=old
    x:y=oldy:crys=crys+1:|SPRITE,16+cr
    ys*2,22,diamo:FOR a=0 TO 60:SOUND
    200-a,130-a,5,5,5:NEXT:lives=lives
    +1:IF lives>5 THEN lives=5:RETURN
    ELSE |SPRITE,2+lives*2,22,live:RET
    URN
420 IF ro=64 AND crys<10 THEN IF mapy>
    6 THEN x=oldx:y=oldy:mapy=6:RETURN
430 IF mapx>8 THEN x=oldx:y=oldy:mapx=
    8:RETURN
440 IF mapx<1 THEN x=oldx:y=oldy:mapx=
    1:RETURN
450 IF mapy<1 THEN x=oldx:y=oldy:mapy=
    1:RETURN
460 IF mapy>8 THEN x=oldx:y=oldy:mapy=
    8:RETURN
470 IF oy=8 THEN old=blank2 ELSE old=b
    lank
480 IF ox=8 THEN old=blank1
490 IF ox=8 AND oy=8 THEN old=blank3
500 IF ox=4 AND oy=4 AND cry(ro)=1 AND
     carry=1 THEN old=diamo
510 IF ox=8 AND (oy=4 OR oy=5) AND exi
    t(ro,1)=1 THEN old=blank
```

```
520 IF oy=8 AND (ox=4 OR ox=5) AND exi
    t(ro,4)=1 THEN old=blank
530 SOUND 1,400,3,5,4,6:|SPRITE,oldx,o
    ldy,old
540 |SPRITE,x,y,droid
550 oldx=x:oldy=y
560 ox=mapx:oy=mapy
570 RETURN
580 m=INT(RND*4)
590 IF m=0 THEN g=g-2:h=h-1:maph=maph+
    1:GOSUB 640
600 IF m=1 THEN g=g+2:h=h+1:maph=maph-
    1:GOSUB 640
610 IF m=2 THEN g=g-2:h=h+1:mapg=mapg-
    1:GOSUB 640
620 IF m=3 THEN g=g+2:h=h-1:mapg=mapg+
    1:GOSUB 640
630 RETURN
```

```
640 IF mapg>8 THEN g=oldg:h=oldh:mapg=
    8:RETURN
650 IF mapg<1 THEN g=oldg:h=oldh:mapg=
    1:RETURN
660 IF maph<1 THEN g=oldg:h=oldh:maph=
    1:RETURN
670 IF maph>8 THEN g=oldg:h=oldh:maph=
    8:RETURN
680 IF mapg=mapx AND maph=mapy THEN |S
    PRITE,2+lives*2,22,blank:lives=liv
    es-1:x=12:y=9:mapx=4:mapy=8:IF liv
    es=0 THEN RETURN ELSE GOSUB 1950
690  IF oh=8 THEN old2=blank2 ELSE old
    2=blank
700 IF og=8 THEN old2=blank1
710 IF og=8 AND oh=8 THEN old2=blank3
720 IF og=4 AND oh=4 AND cry(ro)=1 THE
    N old2=diamo
730 IF og=8 AND (oh=4 OR oh=5) AND exi
    t(ro,1)=1 THEN old2=blank
740 IF oh=8 AND (og=4 OR og=5) AND exi
    t(ro,4)=1 THEN old2=blank
750 |SPRITE,oldg,oldh,old2
760 |SPRITE,g,h,alien5
770 oldg=g:oldh=h:oh=maph:og=mapg
780 RETURN
790 j=INT(RND*4)
800 IF j=0 THEN s=s-2:t=t-1:mapt=mapt+
    1:droid2=alien4:GOSUB 850
810 IF j=1 THEN s=s+2:t=t+1:mapt=mapt-
    1:droid2=alien3:GOSUB 850
820 IF j=2 THEN s=s-2:t=t+1:maps=maps-
    1:droid2=alien2:GOSUB 850
830 IF j=3 THEN s=s+2:t=t-1:maps=maps+
    1:droid2=alien1:GOSUB 850
840 RETURN
850 IF maps>8 THEN s=olds:t=oldt:maps=
    8:RETURN
860 IF maps<1 THEN s=olds:t=oldt:maps=
    1:RETURN
870 IF mapt<1 THEN s=olds:t=oldt:mapt=
    1:RETURN
880 IF mapt>8 THEN s=olds:t=oldt:mapt=
    8:RETURN
890 IF maps=mapx AND mapt=mapy THEN |S
    PRITE,2+lives*2,22,blank:lives=liv
    es-1:x=12:y=9:mapx=4:mapy=8:IF liv
    es=0 THEN RETURN ELSE GOSUB 1950
900  IF ot=8 THEN old3=blank2 ELSE old
    3=blank
910 IF os=8 THEN old3=blank1
920 IF os=8 AND ot=8 THEN old3=blank3
930 IF os=4 AND ot=4 AND cry(ro)=1 THE
    N old3=diamo
```

```
940 IF os=8 AND (ot=4 OR ot=5) AND exi
    t(ro,1)=1 THEN old3=blank
950 IF ot=8 AND (os=4 OR os=5) AND exi
    t(ro,4)=1 THEN old3=blank
960 |SPRITE,olds,oldt,old3
970 |SPRITE,s,t,droid2
980 olds=s:oldt=t:ot=mapt:os=maps
990 RETURN
1000 DIM exit(64,4),cry(64)
```



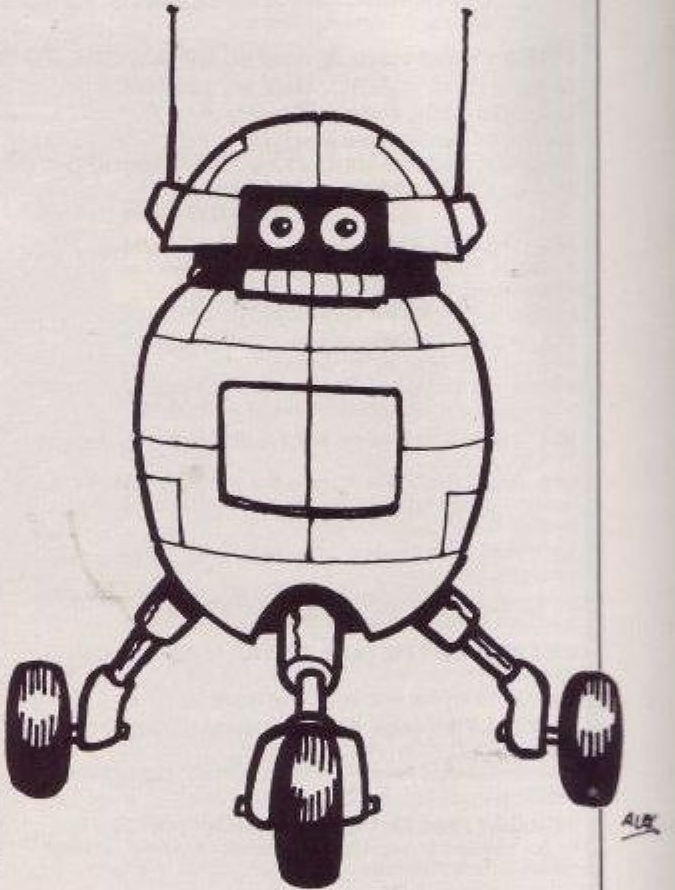
```
1010 RESTORE 1020:FOR i=0 TO 11:READ x
     :INK i,x:NEXT
1020 DATA 2,0,6,18,13,26,0,0,20,13,13,
     13
1030 INK 6,24,6:INK 7,6,24
1040 BORDER 0
1050 DATA 01,0E,A0,21,0A,A0,CD,D1,BC,C
     9,00,00,00,00,13,A0,C3,1A,A0,53,5
     0,52,49,54,C5,00,CD,19,BD,11,50,0
     0,21,B0,BF,DD,46,02,04,19,10,FD,D
     D,7E,04,07,5F,16,00,19,DD,56,01,D
     D,5E,00,1A,47,13,1A,4F,13,C5,E5,E
     5,D5,11,75,A0,3E,00,12,7E,CB,7F,2
     0,05,F5,3E,AA,12
1060 DATA F1,CB,77,20,04,1A,F6,55,12,E
     B,D1,1A,00,E1,00,77,23,13,10,DB,E
     1,01,00,08,09,30,04,01,50,C0,09,C
     1,0D,20,CA,C9,00
1070 RESTORE 1050:FOR f=0 TO 117:READ
     z$:POKE &A000+f,VAL("&"+z$):NEXT
     f
1080 RESTORE 1090:FOR f=0 TO 1211:READ
      a:POKE &A100+f,a:NEXT f
1090 DATA 4,16
1100 DATA 0,80,0,0,0,48,160,0,16,48,11
     2,0,16,48,112,0,116,116,48,160,48
     ,48,48
1110 DATA 160,48,48,48,160,48,48,48,16
     0,48,48,48,160,96,144,48,160,16,4
     8,112
1120 DATA 0,0,48,160,0,0,0,0,0,64,64,6
     4,0,128,128,128,128,64,64,64,0
1130 DATA 4,16
1140 DATA 0,0,160,0,0,80,48,0,0,176,48
     ,32,0,176,48,32,80,48,184,184,80,
     48,48
1150 DATA 48,80,48,48,48,80,48,48,48,8
     0,48,48,48,80,48,96,144,0,176,48,
     32,0
1160 DATA 80,48,0,0,0,0,0,0,128,128,12
     8,64,64,64,64,0,128,128,128
1170 DATA 4,16
1180 DATA 0,0,160,0,0,80,176,0,0,240,4
     8,32,0,240,48,32,80,176,48,184,80
     ,176
1190 DATA 48,48,80,176,48,48,80,176,48
     ,48,80,176,48,48,80,176,48,144,0,
     240,48
1200 DATA 32,0,80,176,0,0,0,0,0,0,128,
     128,128,64,64,64,64,0,128,128,128
1210 DATA 4,16
1220 DATA 0,80,0,0,0,112,160,0,16,48,2
     40,0,16,48,240,0,116,48,112,160,4
     8,48
1230 DATA 112,160,48,48,112,160,48,48,
     112,160,48,48,112,160,96,48,112,1
     60,16
1240 DATA 48,240,0,0,112,160,0,0,0,0,0
     ,64,64,64,0,128,128,128,128,64,64
     ,64,0
1250 DATA 4,16
1260 DATA 0,16,0,0,0,48,32,0,16,48,48,
     0,16,48,48,0,116,48,116,32,48,48,
     48,32
1270 DATA 48,48,48,32,48,48,48,32,96,4
     8,96,32,48,192,144,32,16,48,48,0,
     0,48
1280 DATA 32,0,0,0,0,0,64,64,64,0,128,
     128,128,128,64,64,64,0
1290 DATA 4,16
1300 DATA 0,4,32,0,0,24,48,0,0,24,48,0
     ,0,24,176,0,0,24,176,0,0,24,48,0,
     4,48
1310 DATA 48,32,4,48,48,32,4,48,48,32,
     4,48,48,32,4,240,240,160,24,48,48
     ,48,88
1320 DATA 240,240,240,24,48,48,48,88,2
     40,240,240,4,48,48,32
1330 DATA 4,16
1340 DATA 0,16,8,0,0,48,36,0,0,48,36,0
     ,0,112,36,0,0,112,36,0,0,48,36,0,
     16,48
1350 DATA 48,8,16,48,48,8,16,48,48,8,1
     6,48,48,8,80,240,240,8,48,48,48,3
     6,240
1360 DATA 240,240,164,48,48,48,36,240,
     240,240,164,16,48,48,8
1370 DATA 4,16
1380 DATA 0,4,8,0,0,12,48,0,0,12,112,0
     ,0,12,112,0,0,12,48,0,0,12,48,0,4
     ,24,48
```

```
1390 DATA 32,4,24,48,32,4,24,48,32,4,2
     4,48,32,4,88,240,160,12,48,48,48,
     12,240
1400 DATA 240,240,12,48,48,48,12,240,2
     40,240,4,24,48,32
1410 DATA 4,16
1420 DATA 0,4,8,0,0,48,12,0,0,176,12,0
     ,0,176,12,0,0,48,12,0,0,48,12,0,1
     6,48
1430 DATA 36,8,16,48,36,8,16,48,36,8,1
     6,48,36,8,80,240,164,8,48,48,48,1
     2,240
1440 DATA 240,240,12,48,48,48,12,240,2
     40,240,12,16,48,36,8
```

```
1450 DATA 4,16
1460 DATA 0,80,160,0,0,176,112,0,0,176
     ,112,0,80,52,56,160,80,52,56,160,
     80,48
1470 DATA 48,160,176,48,48,112,188,188
     ,188,188,124,124,124,124,176,48,4
     8,112
1480 DATA 80,48,48,160,80,116,184,160,
     80,116,184,160,0,176,112,0,0,176,
     112,0
1490 DATA 0,80,160,0
1500 DATA 4,16
1510 DATA 0,0,16,0,0,0,112,32,0,16,176
     ,32,0,112,48,32,16,176,56,32,48,4
     8,60
1520 DATA 32,112,52,60,32,112,52,52,32
     ,112,52,52,32,112,52,60,32,112,52
     ,52,32
1530 DATA 112,52,48,32,112,52,48,0,112
     ,48,32,0,112,48,0,0,48,32,0,0
1540 DATA 4,14
1550 DATA 188,188,188,188,124,124,124,
     124,188,188,188,188,0,84,40,0,0,2
     0,168
1560 DATA 0,0,84,40,0,0,20,168,0,0,84,
     40,0,0,20,168,0,0,84,40,0,0,20,16
     8,0,0
1570 DATA 84,40,0,0,20,168,0,0,84,40,0
1580 DATA 4,16
1590 DATA 0,0,0,0,0,80,0,0,0,240,2,0,0
     ,161,2,0,80,161,3,0,240,3,3,2,80,
     161,3,0
1600 DATA 0,161,2,0,0,240,2,0,0,80,0,0
     ,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
     0,0,0,0,0,0,0,0
1610 DATA 4,24
1620 DATA 0,80,240,0,0,225,195,160,0,2
     25,195,160,80,195,195,210,80,195,
     195,210
1630 DATA 80,195,195,210,225,195,195,9
     0,225,195,135,90,225,195,15,90,22
     5,135
1640 DATA 15,90,225,15,15,90,165,15,15
     ,90,165,15,15,218,165,15,79,218,1
     65,15
1650 DATA 207,218,165,79,207,218,165,2
     07,207,218,229,207,207,160,229,20
     7,218
1660 DATA 0,229,207,160,0,229,218,0,0,
     229,160,0,0,240,0,0,0,160,0,0,0
1670 DATA 4,16
1680 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
     0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
     ,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
     0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
1690 DATA 4,16
1700 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
     0,0,160,0,0,0,80,0,0,0,0,160,0,0,
     0,80,0,0,0,0,160,0,0,0,80,0,0,0,0
     ,160,0,0,0,80,0,0,0,0,0,0,0,0,0,0
     ,0,0,0,0,0,0
1710 DATA 4,16
1720 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
     0,80,0,0,0,160,0,0,80,0,0,0,160,0
     ,0,80,0,0,0,160,0,0,80,0,0,0,160,
     0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
     ,0,0,0,0,0,0
1730 DATA 4,16
1740 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
     0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,80,
     0,0,0,160,160,0,80,0,80,0,160,0,0
     ,160,0,0,0,80,0,0,0,0,0,0,0,0,0,0
     ,0,0,0,0,0,0
1750 CALL &A000
```

```
1760 man1=&A100:man2=&A142:man3=&A184:
     man4=&A1C6
1770 alien1=&A24A:alien2=&A28C:alien3=
     &A2CE:alien4=&A310:alien5=&A352
1780 live=&A208:atom=&A394:tele=&A3D6:
     diamo=&A410:door=&A452:blank=&A4B
     4:blank1=&A4F6:blank2=&A538:blank
     3=&A57A
1790 FOR a=0 TO 63:exit(a,1)=1:exit(a,
     2)=1:exit(a,3)=1:exit(a,4)=1:NEXT
      a
1800 FOR a=0 TO 7:exit(a,4)=0:NEXT a:F
     OR a=56 TO 63:exit(a,2)=0:NEXT a
1810 FOR a=0 TO 56 STEP 8:exit(a,3)=0:
     NEXT a:FOR a=7 TO 63 STEP 8:exit(
     a,1)=0:NEXT a
1820 FOR a=24 TO 28:exit(a,2)=0:NEXT:F
     OR a=4 TO 28 STEP 8:exit(a,1)=0:N
     EXT
1830 FOR a=32 TO 36:exit(a,4)=0:NEXT:F
     OR a=36 TO 60 STEP 8:exit(a,1)=0:
     NEXT
1840 FOR a=5 TO 61 STEP 8:exit(a,3)=0:
     NEXT
1850 RETURN
1860 MODE 0:LOCATE 6,2:z$="ROBO-DROID"
     :FOR a=1 TO LEN(z$):PEN a:PRINT M
     ID$(z$,a,1);:NEXT:WINDOW 1,20,6,2
     2
1870 lives=3:ro=0:carry=0:crys=0:droid
     =man2:x=14:y=8:oldx=x:oldy=y:mapx
     =5:mapy=8:ox=mapx:oy=mapy:FOR a=0
      TO 63:cry(a)=0:NEXT
```

```
1880 FOR a=1 TO 10
1890 b=INT(RND*64)
1900 IF b=19 OR b=30 OR b=50 THEN 1890
1910 IF cry(b)=1 THEN 1890
1920 cry(b)=1
1930 NEXT
1940 RETURN
1950 CLS:MOVE 335,48:DRAWR -256,128,5:
     DRAWR 256,128:DRAWR 256,-128:DRAW
     R -256,-128
1960 IF exit(ro,1)=1 THEN |SPRITE,26,8
     ,blank:|SPRITE,28,9,blank
1970 IF exit(ro,2)=1 THEN |SPRITE,29,1
     6,blank:|SPRITE,27,17,blank
1980 IF exit(ro,3)=1 THEN |SPRITE,13,1
     7,blank:|SPRITE,11,17,blank
1990 IF exit(ro,4)=1 THEN |SPRITE,12,9
     ,blank:|SPRITE,14,8,blank
2000 droid2=alien1:g=20:h=13:oldg=g:ol
     dh=h:mapg=4:maph=4:og=mapg:oh=map
     h
2010 s=20:t=13:olds=s:oldt=t:maps=4:ma
     pt=4:os=maps:ot=mapt
2020 IF ro=19 OR ro=30 OR ro=50 OR ro=
     64 THEN |SPRITE,20,13,tele
2030 IF cry(ro)=1 THEN |SPRITE,20,13,d
     iamo
2040 IF ro=64 THEN |SPRITE,11,8,door:|
     SPRITE,14,10,atom
2050 GOSUB 540
2060 RETURN
2070 |SPRITE,16,11,blank:x=14:y=10:GOS
     UB 540
2080 FOR a=0 TO 100:NEXT:INK 11,2
2090 FOR a=0 TO 100:NEXT:INK 10,2
2100 FOR a=0 TO 100:NEXT:INK 9,2
2110 FOR a=0 TO 100:NEXT:|SPRITE,14,10
     ,blank:FOR a=0 TO 100:NEXT
2120 FOR a=0 TO 100:NEXT:INK 9,13
```



```
2130 FOR a=0 TO 100:NEXT:INK 10,13
2140 FOR a=0 TO 100:NEXT:INK 11,13
2150 PRINT CHR$(22)+CHR$(1)
2160 LOCATE 3,5:z$="CONGRATULATIONS!":
     FOR a=1 TO LEN(z$):PEN a MOD 15+1
     :PRINT MID$(z$,a,1);:NEXT
2170 LOCATE 3,7:z$="YOU HAVE ESCAPED":
     FOR a=1 TO LEN(z$):PEN a MOD 15+1
     :PRINT MID$(z$,a,1);:NEXT
2180 LOCATE 3,9:z$="FROM THE 3D MAZE":
     FOR a=1 TO LEN(z$):PEN a MOD 15+1
     :PRINT MID$(z$,a,1);:NEXT
2190 PRINT CHR$(22)+CHR$(0)
2200 FOR a=0 TO 3000:NEXT
2210 MODE 1
2220 PEN 3:PRINT"                  ISOB
     OT
     ============"
2230 PRINT:PRINT
2240 PEN 1:PRINT"                INSTRUC
     TIONS"
2250 PEN 2
2260 PRINT"FIND THE TEN HIDDEN CRYSTAL
     S,THEN TAKE  THEM ONE BY ONE TO T
     HE BOX BY THE EXIT  TO ESCAPE.BUT
      BEWARE OF THE KILLER      DROIDS
      THAT LURK IN THE 65 SCREENS OF
      ROBO-DROID."
2270 PEN 1:PRINT"=====================
     ==================="
2280 PEN 2:PRINT"   USE CURSOR KEYS TO
      CONTROL KRANKY"
2290 PEN 1:PRINT:PRINT"===============
     ========================="
2300 PRINT:PRINT"       PRESS ANY KEY
      TO CONTINUE"
2310 WHILE INKEY$<>"":WEND
2320 CALL &BB18
2330 GOSUB 1860
2340 GOTO 60
```

IK+

TIME to put on your gi, tie your belt, and join sensi on the dojo. Yup, karate time. All you budding bone-breakers will love this, fists and feet everywhere with (if your joystick can take the strain) two opponents. And, as they say, balls. More of that later.

The manual tells you what the areas to aim for are, but misses out the groin (from practical experience, a target often accidentally hit in practice sessions). This has nothing to do with the balls mentioned earlier.

For some strange reason, attacks from behind score you half. In competition karate you deserve all you get if your opponent gets behind you!

Anyway, you're too busy beating silt out of the other guys to worry about such minor details as scores, though there is a system for it; head butts and double face kick give the most points.

Upon biting the dust, your opponent obligingly shows you the score your reverse-twisting-gedan-megathump scored you.

Enter the novice karateka in his white gi, treading nervously on the sacred, Spectrum sized, Mode 1 ball-bashing ground in front of a tasteful art-deco arch, which spans a sunrise shimmering in the bay.

Sudden frantic (and largely random) activity, and there he is: lying on the floor with stars swirling above his head.

Up you rise, trying out one joystick manoeuvre that you know does something useful, and the red and blue opponents bite the dust.





On comes the sensi, and says "White did hell, but red and blue could do better." Eh ? Sorry, I think that's supposed to read "did well", but you never know ....

Other helpful, messages spring forth from the mouth of this wise old sage. The most memorable being the one after a few laps of demo mode: "Where's everybody gone?"

Three rounds, several pints of blood, a galaxy of stars and five loose teeth later, if you are still around, the other guys go away. Not good news, in fact it is the load of balls mentioned earlier.

You have to deflect these balls with a shield or dodge them. They start off fairly slow to start with, but build up to a fair clip as you get better, filling the air like the office party bunfight.

Maybe my score would be helped if I turned off the jazzy three-voice sound that continuously wavers on in the background.

When you go in for a round of combat with this one, you definitely need the right kind of 'stick. As the disruptions tell you, big floppy sticks aren't very good. The best ones are the really sensitive things with a handle the size of a dog-end. Autofire is right out.

The manual recommends that well-known marital art weapon: The original Atari joystick, and for this game they aren't bad.

You certainly won't miss out on anything you normally expect to get from a game like this, and having two opponents to beat up certainly makes it different.

On the higher levels, the high score table really is a distant goal, so don't pull your punches, kicks, sweeps, head butts or whatever.

Author: Archer Maclean for System 3/Activision
Price: £9.95 (tape) £14.95 (disc)

Colin

STARTS of with a naff, cheapo, non-existent loading screen while the tape loads for an awful long time.

It needs the time. It then makes up for it with the clarity of the graphics, their total lack of flicker (though the balls flash a bit), and the shadows. A classic example of how to spend more time on the game, and less on the title screen.

The effects when someone goes down are great, I love the stars, the flickering sunset, and the way they sit on the ground holding their guts after a stomach kick.

The real boost is having two opponents at once. Even if they do sometimes spend their time bashing one another up, they make up for it later by both going for you simultaneously. I haven't enjoyed one of these games so much since that one where they beat one another with sticks.

18/20

Liz

I SAW the crummodore 64 version of IK+ before the CPC game was ready. That features a spider crawling on the gate like object in the background, and a fish which jumps out of the sea.

When I was told that they had been omitted from the Arnold version due to memory constraints I argued that this left it as just another Karate game, even if you do have two players.

I was wrong. IK+ is the most playable karate game ever, it is refreshing to play as The Way of the Exploding fist was so very many moons ago. Don't fight it, part with the cash.

19/20

Nigel

INTERNATIONAL Karate was hailed as a wonderful, playable game. I found it boring and unoriginal. The only thing it made me feel like fighting was the Ed's attempts to get me to review this.

Once clamped into the reviewer's chair, the wooden one with metal bits that plug into the mains, I gripped the joystick. Six games later I had to admit to the truth. I enjoyed a fighting game, after resisting for years. IK+ had me hooked. It's even more fun two-player.

17/20

BOBSLEIGH

IF your idea of fun is plunging down an icy slope at 90 on your bum then you should rush out and get a copy of Bobsleigh now. I have never played a more realistic simulation game, nor one that had my pulse racing almost from the moment I picked up the joystick, which incidentally may need to be replaced as it got ever so slightly bent in a moment of high drama at St. Moritz. It is difficult to imagine how the realism could be improved upon short of asking someone to stuff crushed ice up your trouser leg every time you come a cropper.

Bobsleigh can be played by one or two players. You start as a novice competitor using an amateur class bob.

At this stage it is best to race in single events where you can gain a knowledge of the tracks, perhaps win some races and gain sponsorship money which you will need later on.

A choice of six tracks is available for which maps and details of course records are given.

Each player starts with a certain amount of sponsorship money which may be used to buy basic equipment such as the simplest type of bobsleigh and a set of runners.

Maintenance costs for the upkeep of your bob are payable after each race and there may also be damage and repair costs to be paid if you crash or hit the side wall hard going down the track.

Unless you start winning a few races quickly you are likely to find yourself bankrupt and faced with restarting the game. Once you have built up sufficient funds you can move on to a National class bob; faster, more exciting but easier to bend.

In order to move on to International and Olympic class bobs you will need to compete in full season racing on all six tracks. Finish in the top three in a World Championship season and you can go for gold in the Winter Olympics. Simple, isn't it?

There are plenty of pre-race factors to consider – weather conditions, choice of runners, and so on – but it's once you get on to the run itself that the excitement starts.

The obligatory push start is achieved with a flurry of joystick waggling, and then you're onto the course proper.

Steering with the joystick should be gentle at first, but as speed begins to build and the track tilts at ever crazier angles finesse is abandoned for the simple expedient of shoving the stick into a corner, closing your eyes and praying.

And it's no good showing a healthy regard for life and limb and stamping on the brakes at moments of extreme crisis – braking on the track is frowned upon in the best bobsleighing circles and you will be branded a coward and disqualified. And quite right too.

The sense of achievement, not to mention relief, as you cross the finish line the right way up and still in possession of the same number of limbs that you started with at the top, is exhilarating.

Digital Integration has come up with a winner here and is, for once, not going to be worried if accused of going downhill fast.

Author: In-house development at Digital Integration
Price: £9.95 (tape) £14.95 (disc)





Nigel

GRAPHICALLY I found Bobsleigh disappointing. Mode 0 graphics may aid speed but don't enhance the detail. The small playing area leads me to suspect that Digital Integration has had considerable problems with speed. However I applaud the decision to sacrifice presentation to make the game really playable.

17/20

Colin

IT is about time someone realised what sport is really about... money. It's all very well saying it is more important to take part than win, but without the odd win you don't get the sponsorship, and without the money you can't even play the game.

The more money you have the more likely you are to win. So it good to see a game which reflects the true, commercial, spirit of sport. Plays well too.

18/20

Liz

DIGITAL Integration is THE simulation specialist. I still get excited as the engine revs climb every time I climb into Tomahawk. I'm eagerly looking forward to ATF, their next aircraft game, but this helps quell the anticipation. A fun, even thrilling game. Don't miss it.

19/20

BLOCKBUSTERS

THEY say, they do, that children's TV contains the very best examples and the very worst excesses of that particular medium's output.

Lawyers relax – I'm not going to name names, just say that Blockbusters is a popular quiz game pumped out at that time of day.

If you've seen the programme, skip forward secure in the knowledge that the program is an accurate simulation of all the main foci of interest. If you haven't, then pay attention.

There is a matrix of letters on a net of hexagons. A contestant, of which there are two teams, chooses a letter.

Bob Holness (a modern hero of our times – more on him later) asks a question, the answer to which begins with the chosen letter.

If the contestant answers correctly, the hexagon lights up in his/her colour. If not the other team gets a chance to supply the correct answer, which if successfully produced results in the hexagon lighting up appropriately.

The winners are the first team to link up a line of light across the board; one team top to bottom, the other side to side.

Once enough games have been won the team responsible goes forward to the Gold Run.

This time there are a number of letters in each square, and the answer to the questions is a well known POS. I'm sorry, you ran out of time, the answer was Phrase Or Saying.

The inimitable Bob Holness is, Blockbuster fans please note, all there. Well, his head is. Digitised. In several poses.

Does a passable impression of Max Headroom, too, his little ickle head jolting from side to side as the questions, Trivial Pursuit style, chug out at speech rate.





Wait too long before answering, and the buzzer sounds for your opponent to leap in and grab the hexagon.

A certain facility at typing is needed for the Gold Run, because there are only 60 seconds to answer at least five questions of two or three words each.

There's a genuine gameshow big clock ticking away the time in the corner, but don't worry if you can't type quite that fast.

Some faintly clever logic manages to unscramble misspellings so that – most of the time – the computer guesses correctly what it was that you were on about.

The final touch to send the addict off on to a different astral plane is the faithful renditioning of the theme tune through the tiny Amstrad speaker. It's all good stuff.

There aren't any of the famously plush Blockbuster prizes though...

Computer quizzes in general need to have a good variety of questions, and Blockbuster has extra stocks hidden further along the tape.

At some point (after a goodly number of games, it should be said), a prompt appears for the players to play the tape and another batch loads in with little fuss.

Put down that joystick. Pick up that dictionary (and throw it at the kid brother who wants to play Barbarian – looking things up is cheating). It's time to play Blockbusters! Do I get Bob's job now?

Author: Oxford Digital Enterprises for TV Games/ Domark
Price: £9.95 tape £14.95, disc

Nigel

ACROSS the land, a nation titters. "I'd like a P please, Bob". A quiz game with none of the false bonhomie (now there's a good Blockbuster's word) of the more "adult" versions, it's got secret fans all over the place.

And the game is as good as you're going to get. As in all good computer versions of a Real Thing, the Domark variant has captured the atmosphere.

Her Indoors and the l'il sister were up until the smallest of the small hours playing this one, and once I'd reclaimed my Arnold I can see why.

It's so easy to be cynical, but the sheer ludicrosity (see note for bonhomie) of a miniature Bob Holness will win over the hardest heart. A goodie.

18/20

Colin

THE good news is that this does not require you to learn the pathetic hand jive they use on the telly when they have run a bit short.

The bad news is that the keyboard scan is distinctly dodgey.

This is a reasonable game to play in a crowd, very much of the Trivial Pursuit genre. It is still a tarted up board game, but I'm not adverse to that.

16/20

Liz

THE board in Blockbusters can be lit with a letter, a solid white ground or a cyan-like blue. It is such a device which was used on an American programme.

To illuminate the board in America three projectors were used for each letter. When the show (and I'm not sure it was Blockbusters) was imported the set designer asked what was wrong with light bulbs.

The US set designer explained. His brother-in-law sold projectors. All of which tells you nothing of the game. It's quite good, but you can't shoot at anything.

17/20

ANARCHY





MAZE game, nasties, zap zap zap. MEGO factor 9? (MEGO = Civil Service slang for My Eyes Glaze Over – a certain sign of boredom). No. Not even a little bit.

I can't give the game background, nor yet the names for the bits on screen, nor yet a detailed description of all the options. All that appeared for review was a disc with Anarchy scribbled on the label, and a glowing recommendation from You Know Who.

Now normally I poke halfheartedly at such an offering for a couple of minutes, fail to guess the controls, remark mildly about the weather and go onto the next game.

This time I didn't put the joystick down for half an hour.

The standard opening screen is just that – standard. A couple of wandering thingumybobs were prowling the corridors of a simple maze, the walls of which are composed out of one kind of block.

There are two other kinds of block scattered about, and there is you, a tank-like blob with a pointy bit that goes zap zap zap.

The instinctive gamesplayer immediately twigs that you hit the two non-wall kinds of blobs with the emissions of the zap zap zap device, while dodging or hitting the floating fiends. And the instinctive gamesplayer is right.

But it's the details of the game which set it apart. Firstly, there is as much fire power as you want – just hold the button down – and no messing about with refuelling or rearming. A small point, but one much appreciated.

Secondly, when you hit a nasty it just stops moving for a while; hit it some more and it gets pushed backwards a bit.

Thirdly, and by far the most important, the zap zap zapper will not work on an item in an adjacent block. To hit something, you have to have at least one blank square between it and your pointy bit. And that lends a whole new character to the game.

In the beginning it doesn't seem to matter that much. You wander around the maze, unleashing massive power on anything that takes your fancy and muttering under your breath when you have to back off a little.

Polish off a screenful of blocks, and an exit appears over which you have to stop. You then get transported to the next screen.

And now it's a little difficult. There are scads of shootable blocks, but arranged so that you can only start zapping them from one or two points.

And once you're working your way through a set of blocks, the nasties can creep up behind you, with the usual results. It's difficult to describe the numerous ways in which this apparently random rule of adjacent blocks can be made to trap, twist and contort the apparently straightforward path between you and the high score.

There are cul-de-sacs where hitting an oncoming alien can trap you until it recovers and either wanders away (good) or advances once more towards you (bad).

There are vast expanses of shootable blocks that have no apparent way in. There's a time limit of one minute per screen. There's a gibbering reviewer typing as fast as he can in order to get back to the action.

Oh boy. Hewson has done it again.

Author: Michael Sentinella and Michael Croucher of Hewson/ Rackit
Price: £2.99 (a bargain)

Nigel

THE sad loss and subsequent legal meowling of two of Hewson's top programmers at the end of last year seem only to have sharpened the commercial wits of the company.

Here is a nice, simple game with nice, simple rules selling at well under the fiver which any other company would have dressed up, overpriced and oversold.

Anarchy could, if brought out three years ago in the arcades, done very nicely indeed. As it is, we'll just have to live with a reasonably priced fun game with more unexpected complications than the Alliance merger. We'll cope.

19/20

Colin

IF all the games I've described as having total "just one more game" appeal were laid end to end, they'd stretch from here to the Ed's office two floors down.

But if you dig back through some recent issues of *ACU* you'll see most of them are history. This is the first for a while, a game to get the adrenalin flowing and the grey matter buzzing.

What's more it is only £2.99. A veritable bargain.

19/20

Liz

MICHAEL Sentinella. Heard of him? No neither had I, until Anarchy appeared. This guy is gifted. Hewson is the breaking ground for real talent.

John Philips is a Hewson protege, he amazed us all with Impossaball and has gone on to produce the truly wondrous Nebulus.

Expect the man responsible for Anarchy to follow in his hot, hot, hot footsteps. This game *could* stand proud as a full pricer. Look, stop reading, go and buy it...

20/20

"It's so simple to use"

"How are you getting on with that spreadsheet?"

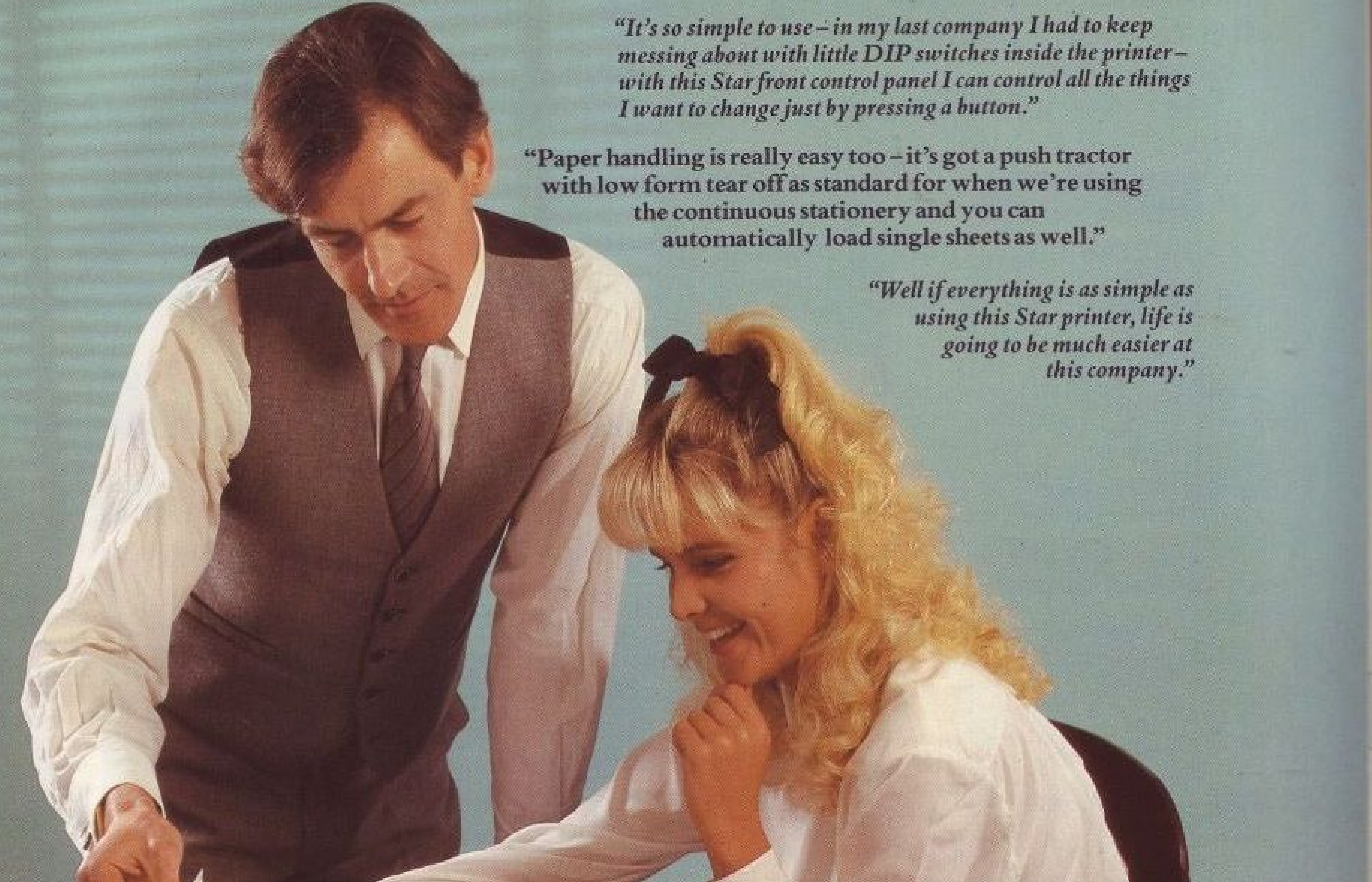
"It's just printing out now, I can't believe it's really that easy, I just did what you said and this NR-15 printer has done the rest."

"Yes, since we've had this Star Printer, it's made things a lot easier, it's fast – 240 characters per second in draft, it's got excellent Near Letter Quality at 60cps, so I can use it for my letter writing too, it has a large memory – 12K – so you can carry on using the system while the printer gets on with the job of printing."

"It's so simple to use – in my last company I had to keep messing about with little DIP switches inside the printer – with this Star front control panel I can control all the things I want to change just by pressing a button."

"Paper handling is really easy too – it's got a push tractor with low form tear off as standard for when we're using the continuous stationery and you can automatically load single sheets as well."

"Well if everything is as simple as using this Star printer, life is going to be much easier at this company."



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9 AU4

PAWS for thought

The Professional Adventure Writer sets out to be the pre-eminent adventure game designer programmer. Pat Winstanley finds that such a program requires some careful planning before your finger strikes the key

OVER the years Amstrad owners wishing to write adventures have had a choice of utilities to help them, what with The Quill and GAC. Now a newcomer to the range looks set to blow the lid off the market.

Gilsoft (who brought us The Quill) is about to release a new version of The Professional Adventure Writer. PAW has been available on the Spectrum for around a year now and incorporates all of the Quill's facilites plus many enhancements. The new Amstrad version has everything the Spectrum version offers (except graphics) with one great advantage . . . memory capacity.

The Amstrad PAW is disc only, runs under CP/M and offers a staggering 60k of free memory even before a 40 per cent text compression option is used. It also offers the facility to pull extra data from disc during play (either text or graphics), giving a vast canvas for the adventure writer.

On the disc are three main programs, a text editor, a compiler and an interpreter. Instead of using a menu to access the database, data is typed into the editor and saved as a text file. The compiler is then used to load the text file and turn it into machine code, which is then run using the interpreter.

The biggest advantage of the system is the facility to enter text using your own word processor instead of the editor supplied (which is very rudimentary and definitely a last resort). Text editing is far easier and faster using this method as all the features of your word processor can be used eg. find/replace, block move/copy, spellchecking and so on.

The only restriction on your choice of a word processor is that it must be capable of generating Ascii files. However, your game cannot be tested until the text has been compiled; compilation takes time and needs to be repeated every time a change is made to the text file.

Also on the disc are several short programs for configuring your working disc. My preview copy came with the interpreter configured for the PCW's 90 by 32 screen layout. Using the installation program provided was simply a matter of typing in the various parameters relating to the 6128. The text editor also has an installation program for the same reason.

Since only the interpreter is concerned about which machine you are using, the same source and compilation files may be used to generate an adventure runnable on either machine, regardless of the development machine.

Quill users should have no difficulty in using PAW immediately. Most Quill commands and routines are still there, with many more added on to increase flexibility. But a game previously written using The Quill should be more or less compatible with PAW needing only minor modifications. You won't be able to simply load a Quill database into PAW, you'll have to retype it, but the use of a text editor makes that simple.

GAC users like me will probably have more problems. The two systems work in slightly different ways. In PAW connections are checked after the other conditions, whereas in GAC they are checked first.

As a GAC user I found it took me some time to get used to the differences in the program flow, but as the principles are the same it was a matter of practice rather than hard work. The language used in conditions is similar in both programs, although you will find some changes in syntax such as HERE in GAC being equivalent to PRESENT in PAW.

The disc supplied holds a short test game both in text and compiled forms. This game is very simple, but demonstrates some of the ways conditions can be written to achieve speech, interactive characters and so on.

Also on the disc is a startup source file containing the text for a variety of common vocabulary entries, conditions for getting and dropping objects, inventory and so on, and 60 messages used by the system for these and other common adventure routines.

My preview copy did not include manuals, but using those provided for the Spectrum, together with some notes on the differences between the two versions proved more than adequate.

When the manuals are ready they will consist of a beginner's guide which will take you through the test game step by step, explaining each entry as it is met, and a technical guide giving all the essential technical details to get the best out of the system. If the Amstrad manuals are anything like those for the Spectrum nothing will be left out.

As for capacity, up to 253 distinct words plus synonyms may be entered in the vocabulary in each of seven different categories. Up to 510 messages are available 60 of which are used by the system and can be accessed by the writer. You can have 252 rooms and 255 objects.

The programming language consists of 96 keywords. Conditional keywords check such things as the location of the player and objects, whether

```
I am on a gravel path running East to West, by a park bench, to
the
South is a grassy area while to the North I can see a bandstand.
The dog follows me wagging his tail.

What should I do now?
  >N
I am standing on the bandstand which appears to be made of ornate
cast
iron painted white.
To the South is a path.
A small bird is here.
The bird has a ticket in its beak.
The dog follows me wagging his tail.
The bird sees the dog and flutters away quickly.

What should I do now?
  >SAY TO DOG "SIT"
The dog is sitting quietly.

What next?
  >DROP LEAD ON DOG
Trustingly the dog lets me put the lead around its neck.

What next?
  >TIE LEAD TO BENCH
I've tied the lead to the bench.
```

An example of screen output from the sample game

```
(Conditions)
/PRO 5      :Speak to dog

_    _    PARSE                  :Convert string to LS
          MESSAGE    16          :Not valid phrase so dog doesn't...
          DONE               :...understand

SIT  _    ZERO 14            :Dog not partially tied up?
          SET  14            :Now sitting quietly
          MESSAGE    24          :Tell player
          DONE

COME _    EQ    14   255  :Dog sitting?
          CLEAR      14          :Now normal
          MESSAGE    18          :Dog follows
          DONE

_    HERE EQ    14   255  :Dog sitting?
          CLEAR      14          :Now normal
          MESSAGE    18          :Dog follows
          DONE

_    _    MESSAGE    16          :Anything else

:Flag usage
:
:Flag  5 is used to determine when the bird flies
:Flag 11 is used as a 'work' flag
:Flag 12 holds current location of Bird
:Flag 13 holds current location of Dog
:Flag 14 holds the status of the dog ie   0=free to roam
:                                         1=has lead around neck
:                                         2=tied to bench
:                                       255=sitting quietly
```

```
(Messages)
/18
The dog follows me wagging his tail.
/19
A lead trails behind the dog.
/20
The dog is tied to the bench by a lead.
/21
Trustingly the dog lets me put the lead around its neck.
/22
I've tied the lead to the bench.
/23
Who should I say it to?
/24
The dog is sitting quietly.
/25
I've untied the dog from the bench.
```

Some messages and conditions in the sample game

objects are carried or worn, the status of any of the 255 flags including those used by the system, the content of the player's command and whether time or random elements are significant.

Action keywords cover manipulation of objects including a very useful "doall" which you can use to create your own routines. Also included are checks for the weight of objects and the ability of the player to carry a particular weight and number of objects.

A set of actions are included to manipulate flags in virtually any way, and another set to configure screen layout providing total freedom in that area. Also available are ramsave and ramload, and a command to jump out of the runnable program to execute a subprogram either on disc or in ram then return from where it left off.

Conditions are entered in a series of process tables which can be called from each other, making structured programming a joy. One very useful feature is the facility to place comments anywhere in the source files. These comments are ignored by the compiler, so take up no space in the finished game.

Overall, PAW offers tremendous flexibility – I haven't yet found anything I couldn't do with it except getting it to recognise more than the first five letters of words in the vocabulary.

The novice can ignore complications and produce playable games at the simplest level, while anyone prepared to take the time and trouble to learn the intricacies of the package should be able to produce adventures to rival those from Infocom and Magnetic Scrolls.

The lack of a graphics facility should prove no hardship (who needs 'em anyway?) as these can be prepared using other packages and called from the disc during play.

If you are a budding adventure writer and you have a disc drive PAW is well worth buying. If you don't have a disc drive it's worth getting one so that you can use PAW. No other system on the Amstrad comes close to it in terms of capacity and flexibility.

PAW costs £29.95 and is available from Gilsoft International Ltd, 2 Park Crescent, Barry, South Glamorgan. CF6 8HD

Applications advice



David Foster, the computing equivalent of Clare Rayner, sorts out problems of a binary nature.

ANOTHER bundle of queries this month, but first of all, I have had a number of enquiries from readers about the address of the company that market the Qualitas print enhancement program that I did a mini-review of a month or two ago.

Qualitas is published and marketed by Seven Stars Publishing, 34 Squirrel Rise, Marlow, Bucks. LS7 3PN. It costs £19.95 on disc and £12.95 on tape.

Can I also remind you that unfortunately I do not have the time to send individual replies to everyone who writes, so please do not send any stamped addressed envelopes. Replies will be made through the pages of the magazine (assuming I have an answer, that is!).

Thank you, also, to all those people who have written to say that they find the column interesting and also to those who have sent in the questions.

I apologise if so many of the questions seem to be connected with printer problems once again, but they do seem to cause more problems than anything else. The editor has agreed to give me a bit of extra space to try and explain some of the more common printer problems.

I have also received a number of questions from people who have found what appear to be bugs in programs, asking what they can do about them, as they have had no success when contacting the software company concerned.

I have been in touch with these companies, and if or when I get any information from them I shall publish the answer. If it is, in fact, a problem with the program, there is usually little that you or I can do to resolve, it and we can only rely on the software house to sort it out for us.

Small Trader's Pack & Invoicer Pack

The Small Trader's Pack and the Invoicer Pack is from a company that is new to me S.D. Microsytems, although from the accompanying literature it appears that it has been available for about a year on the Sinclair QL and has now been converted for the Amstrad CPC6128.

The documentation that came with the program informs me that this is an advance review copy and perhaps this should be borne in mind during the course of the review. The final version may well be different from the version I have tried.

The Small Trader's Pack is described as being an all-in-one package for the self-employed person or very small firm and consists of a number of separate programs linked by a main menu. The facilities offered are sales ledger, purchase ledger, mailing list, stock control, phone directory, mini-calculator, disc utility and a unit conversion suite.

The second pack covers Sales Ledger, Sales Invoicing, Statements and the Disc Utilities and Mini-Calculator again. The Invoicer Pack may be used on its own, or together with the Small Trader's pack, in which case it links the data.

The programs are written in Basic, and according to the manual are suitable for the CPC6128, although I can see no reason why they should not work on a 664, as no use is made of the extra memory of the 6128. It is possible that they might work on the 464 also, but I suspect that some 664/6128 Basic commands might have been used.

The manuals are well written, clearly stating what you should do to use the program and neatly presented, although the copies I received were printed out on a very "dotty" dot matrix printer. Perhaps the final version will be done in NLQ at least.

Unfortunately, I cannot really say the same about the programs. The idea behind them is good, but when using them, I kept getting the feeling that the author still had a lot to learn about Locomotive Basic.

Throughout the program you are told that fields may be a certain size, but at no time is any checking done to see that these sizes are not exceeded.

For example, you are told that the mailing list will permit only 20 characters for the name of the person, yet you can type in 255 characters and the program will accept it. It doesn't even bother to truncate your entry at the permitted length.

When selecting from menus, you only have to enter one character or number, but the program requires you to press Return and if you choose to enter 255 characters, so be it, although I will admit that this time it will reject it. It does so by clearing the screen and re-drawing the whole menu, rather than just requesting a re-entry.

Presentation is messy, with Modes 0, 1 and 2 all being used at different times; the colours change as well. You start out with the main menu in the blue and yellow default colours, but having used some of the modules, when you return the colours will be something else. On occasions,

they can be a little awkward to read with the resulting colour combinations.

Having gone on at some length about the shortcomings of the programming technique, some or all of which hopefully, will have been corrected by the final release version, how do the programs work? The ideas behind them are good, but I feel that there are once again a number of weaknesses.

There is an option in the accounting modules to delete an entry. While one might well like to delete entries, common accounting practice decrees that you should never do so, but correct them by making contra entries if they have once been entered.

Certainly my accountant would take a very close look at any accounts that had been created with a program that allowed you to remove items if you didn't want them, and I suspect that the Tax Office and Customs and Excise VAT might also feel much the same.

Apart from this, the accounts do more or less what you would expect of them and make some provisions for VAT as well. Again, there are limitations, as there appears to be no provision for other than one VAT rate.

Currently, there are at least three levels of VAT, zero rated, exempt and standard rate, and at one time we also had a fourth rate. As it stands, it seems that there is no way to differentiate between zero and exempt, which is not correct.

The mailing list option is a very simple database which permits you to sort names into order on the first field (name) and allows you a field for title (Mr, Messrs etc), road, town, county and postcode. In addition, you may enter telephone number, notes and the name of the contact, or addressee.

Finally, you may specify a single character code, to be used for selectively listing names. You might use S for suppliers and C for customers, although you can choose how you want to break them down.

The mailing list works as long as you don't exceed the limits mentioned in the manual (the program won't stop you) and you only want to print labels "one across" the page.

The mini-calculator I found to be a complete waste of time, as it is much simpler to press the required keys on a calculator, or even use a PRINT statement from Basic than it is to use the arbitrary mixture of function keys for the operators and the numeric pad for the numbers.

Disc utility is also, similarly, a simple effort and is used to allow you to perform a CATalogue of all files on the disc, change drives, Load or Save Data files and also Delete them.

The Invoicer Pack operates along similar lines to the other programs. The first page of the manual explains that there is no specific way to create credit notes, but that this can be done by printing credit invoices, with the figures being entered as negative values. Hardly an inspiring start.

The invoice generator can either be used as a sort of electronic typewriter to generate invoices and store up to 100 names and addresses, or, in combination with the Trader's Pack, to link the transactions with the Trader's accounts, the sales ledger being essentially the same program in both Packs.

I am sure that by now you will have grasped my feelings about the programs, but in summary, I think that the idea behind the programs is good, but the execution on the version that I tried left a lot to be desired, both in terms of programming, presentation and concept.

The idea of a suite of programs for the sole trader or small business is good and I am sure there is a market for such a program, but I would be dishonest if I recommended these programs to anyone in the current state of their development.

I hope that S.D. Microsystems take a close look at their programming and also consult an accountant about what he feels the programs ought to do and how.

S.D. Microsystems
PO Box 24
Hitchin
Herts
SG4 0AE

Tel: 0462 675106

Prices:-
Trader's Pack: £24.95
Invoicer Pack: £14.95 (£9.95 if purchased with Trader's Pack)

RSX commands and AMX Pagemaker



John Weller has a problem with Pagemaker, in that he cannot get it to work with single sheet paper. What he finds is happening is that the Paper out sensor on the printer causes printing to stop before the page is completed, because the end of the single sheet paper has cleared the sensor.

Most printers, and I think the Epson FX800 is one of them, have a DIP switch that enables you to disable/enable the Paper out sensor. If this is set to disable, it ought to cure the problem because even if Pagemaker performs a reset of the printer at the start of a page it will only reset to the setting at switch on.

Mr Weller also commented on the fact that he had tried to write an RSX to send the required software codes to the printer from within Pagemaker, which supports the use of I commands, but that it appeared that Pagemaker located itself over his RSX code.

I am not surprised to hear that Pagemaker did so. A program so complex probably makes use of every spare byte it can find. He comments on the fact that it seems rather pointless of AMX allowing the use of bar commands if there is nowhere to put them.

The point is, of course that there are really two sorts of bar commands – those that you load into ram from a disc file and those that are an integral part of rom software and are used to call the program in rom.

It is this latter sort that can be called from Pagemaker, allowing you to make use of commands from rom software and also the bar commands that are a part of the disc drive commands, such as I DIR and I TAPE.

5¼in disc drives



S. Whaley writes to ask whether he can use some 5¼in drives from his Apple II computer on the 6128 he also possesses. I don't know the Apple disc drives, but if they comply with the Shughart standard there is a distinct possibility that they can be made to work with the CPC6128 as a second drive.

Having said that, it may well not be worth all the trouble of sorting out a suitable cable and connectors, as under Amsdos they can still only be used as a single-sided drive, and with different size drives you lose the benefits of just being able to put a disc in whichever drive you want.

Having a Brainstorm?



Peter Ceresole uses Brainstorm, the ideas processor' on his CPC and is frustrated by the fact that it insists on printing out pages to a length of 66 lines per page, whereas he uses A4 paper which has a length of 70.

He has tried all sorts of things, from inspecting the code with Maxam, to contacting Caxton, the publishers of Brainstorm, for a patch, but without success. I have found the reason for the lack of success with Caxton. They informed me that they are no longer marketing Brainstorm and that it is now supported by the authors, Brainstorm Software.

I have used Brainstorm quite a lot, but on the PCW, so I cannot try it out on the CPC. From my experiments, it appears that Brainstorm does its own counting of lines printed and then sends a number of line feeds to clear the page break. As there is no configuration program to allow you to change the settings for page length, there would appear to be little that can be done about it.

However, from my experiments, it appears that the situation may well be improved by making use of the SETLST command before loading Brainstorm to alter the settings for either page length, or "skip over break", or both. For an Epson compatible, the codes are shown in Figure 1.

Mr Ceresole may well have to experiment a bit to find suitable settings, but I think it can be done that way. I have contacted the author and he is looking into the problem, which did not occur with other versions, as they came with an install

program and he has promised to get come back to me with a solution.

```
''ESC'C''70' ;rem set page length to 70
''ESC'N''10' ;rem set skipover to 10
```

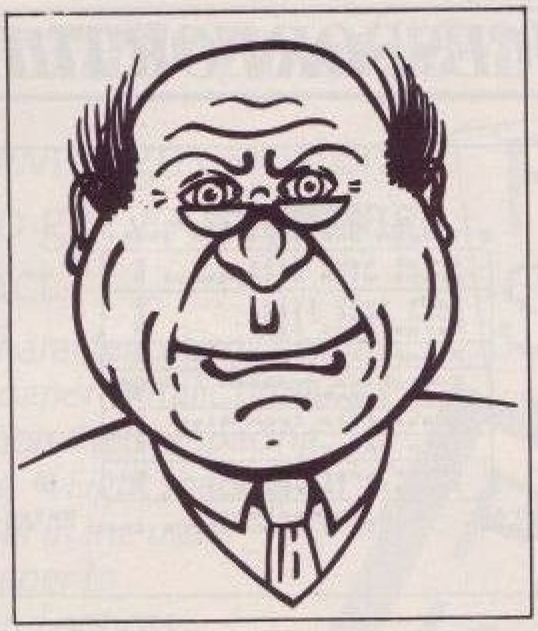
Figure I: Suggested entries for a file suitable for use with SETLST command, to alter page settings on an Epson printer. The semi-colon and the comments following them should not be entered.

MasterCalc-DRGraph and 8 bit port problems



B. Soan has two problems. First of all, he wants to know whether there is any way to fool DR Graph into thinking that export files from Mastercalc are in a suitable format for it to use. The simple answer is no. Just re-naming the files to .DIF or .SDF won't convince it that they are really files of the sort it requires.

I am sure that it would be possible to write a program to convert export data from Mastercalc into a suitable form, but not an easy task.



Mr Soan's second problem is that he has bought an 8 bit printer port and finds that he can no longer use the screen dump program (the one published in March 1985 *ACU*) which used to work perfectly before.

The reason is simply that the original program was written to take account of the fact that the printer only received its data on 7 data lines, but the new port expects to receive it on all 8.

I don't think there is any simple solution to this problem, other than to find a printer dump that was written for use with an 8 bit port.

Indexed databases

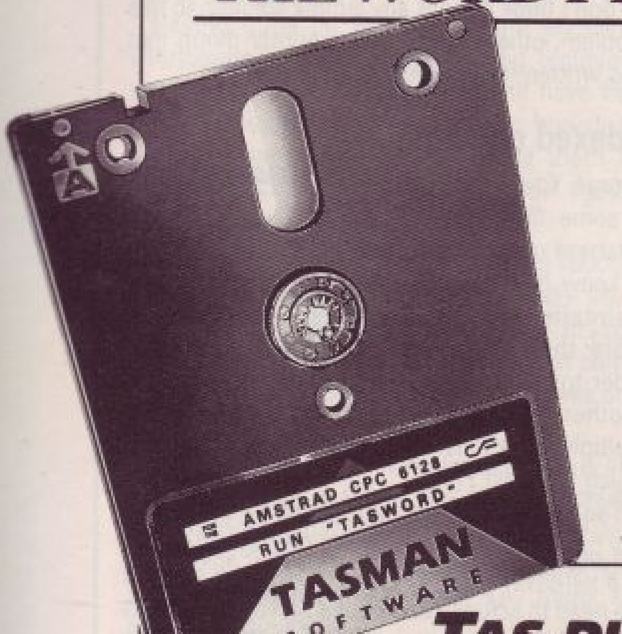


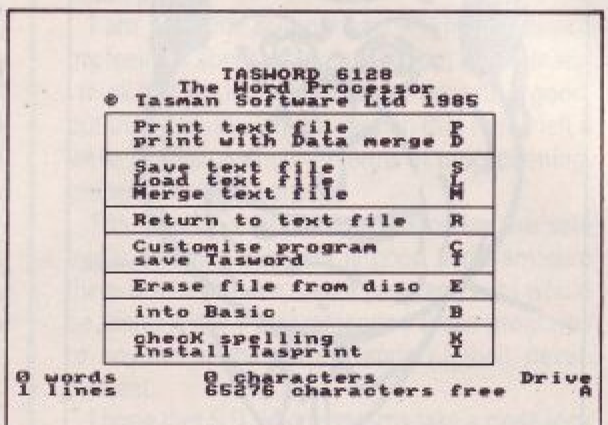
George Young, who wrote in some time ago with a database query, would like to know of databases that maintain Index files on more than one field, in order to rapidly change from one sort order to another. One program that certainly handles multiple index files is AtLast, the latest version of which is AtLast Plus.

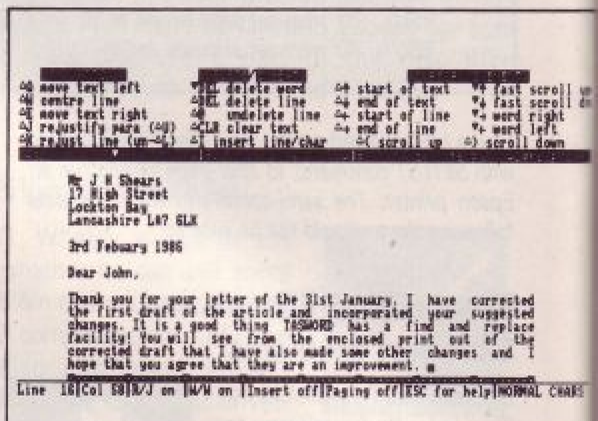
You can switch from one index to another at any time, thus allowing you to display a data file in a variety of different sort orders, but without the need to actually carry out a sort as the entries are made in each index at the time of entry of the data. Large numbers of different Report formats are also allowed.

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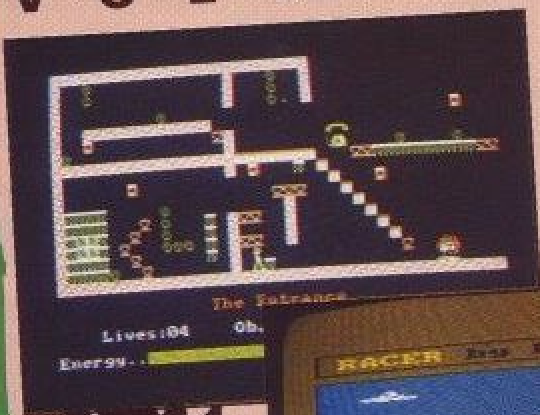
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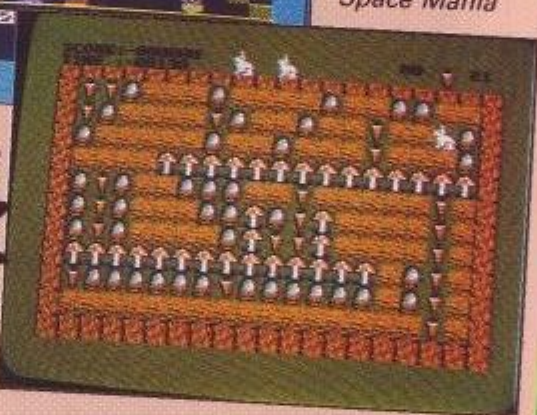
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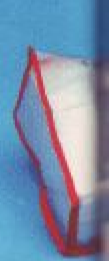
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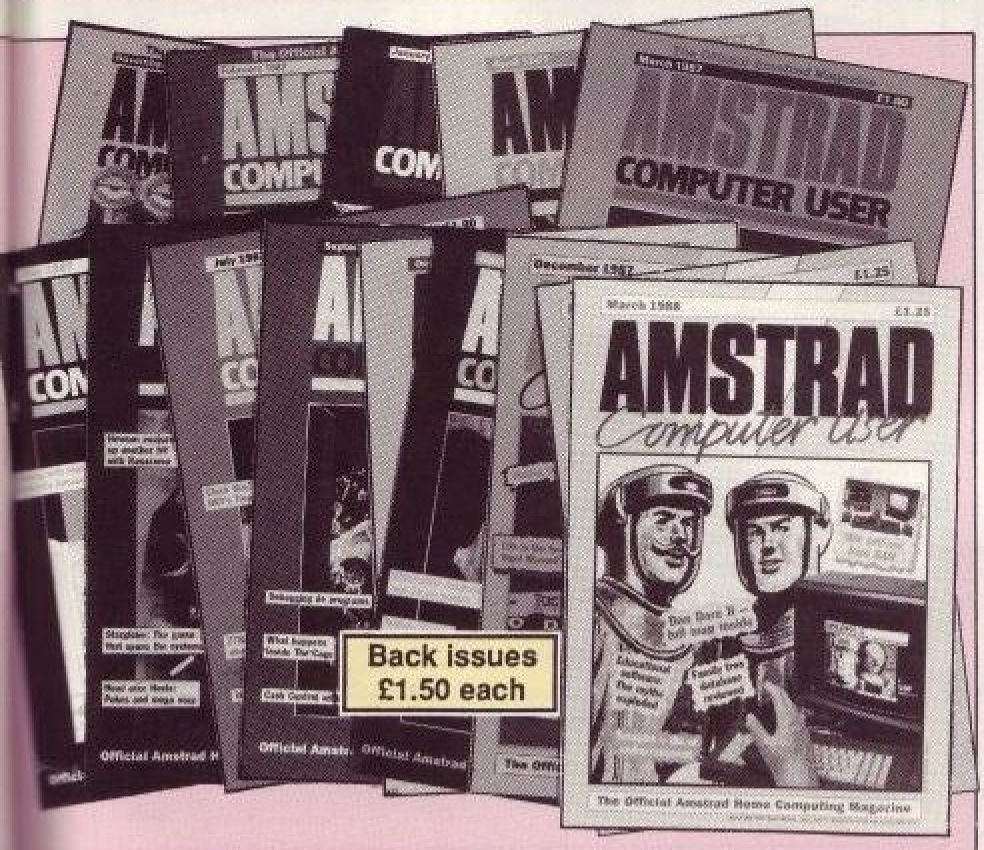


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The Least Significant Bit

DO you fancy a job where you can play computer games all day. You do? Well, if you can't get a job as a magazine editor you could do worse than take a stroll down Tetbury High Street. Microprose UK has its head office there and a sign in the window asks for a YTS computer games evaluator. It stipulates that you must be lively. No doubt to provide a contrast with some of the existing staff.

Reverse licence

COMPUTER games of books are not new. Not a Penny More, Not a Penny Less is perhaps the most famous. However the book of the computer program is a new twist. The Americans are, not surprisingly, the first to have thought of this. You can now buy a 210 page book on how to play Sublogic's Flight Simulator.

Talking of Sublogic you may have seen their name plastered all over someone else's advertisements. Actionsoft has a PC submarine simulator which is being advertised by a collection of retired army, navy and air force top brass. The advertisement may give the impression that they have written the games – or at least had something to do with them. But no. They are just a front, a façade for SubLogic who really wrote the game.

Two boffins are better than one

SIR Clive Sinclair, never a man far away from the headlines, is teaming up with Nolan Bushnell, the man who has been in the computer games industry since the beginning 'cos he founded it. It was Nolan Bushnell who set up Atari and then sold out when the business was at a peak.

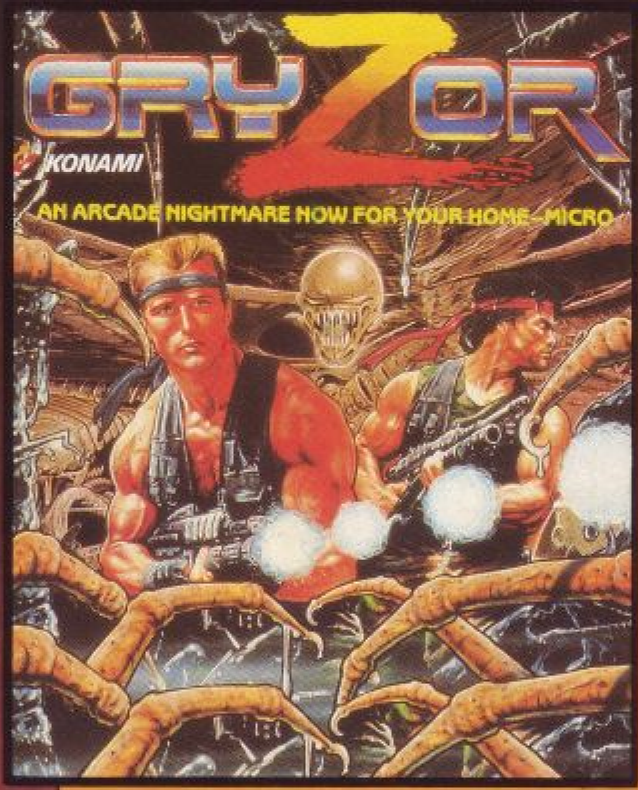
Nolan and Clive are working on a microprocessor-based robotic project. Whatever they produce you can be sure that it will be small and black with a funny keyboard and need loads of add-ons to be useable.

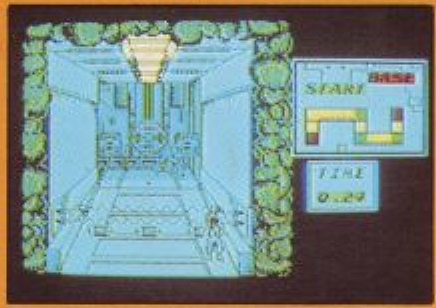
Unfair to under 18s

THERE are loads of new games based on films due out soon. Predator and RoboCop are two which spring to mind. Lance "letters" Davis went to see the Schwarzenegger epic and came away looking forward to playing the game and killing a few yellow blooded nasties. He even started to smear himself in mud to stop the thermal imaging from working. But you might not be able to work these things out. You might be under 18. If that is the case you won't want the software. Or will you? Lance has asked that you write in if you have any views about film tie-ins with movies you cannot see.

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